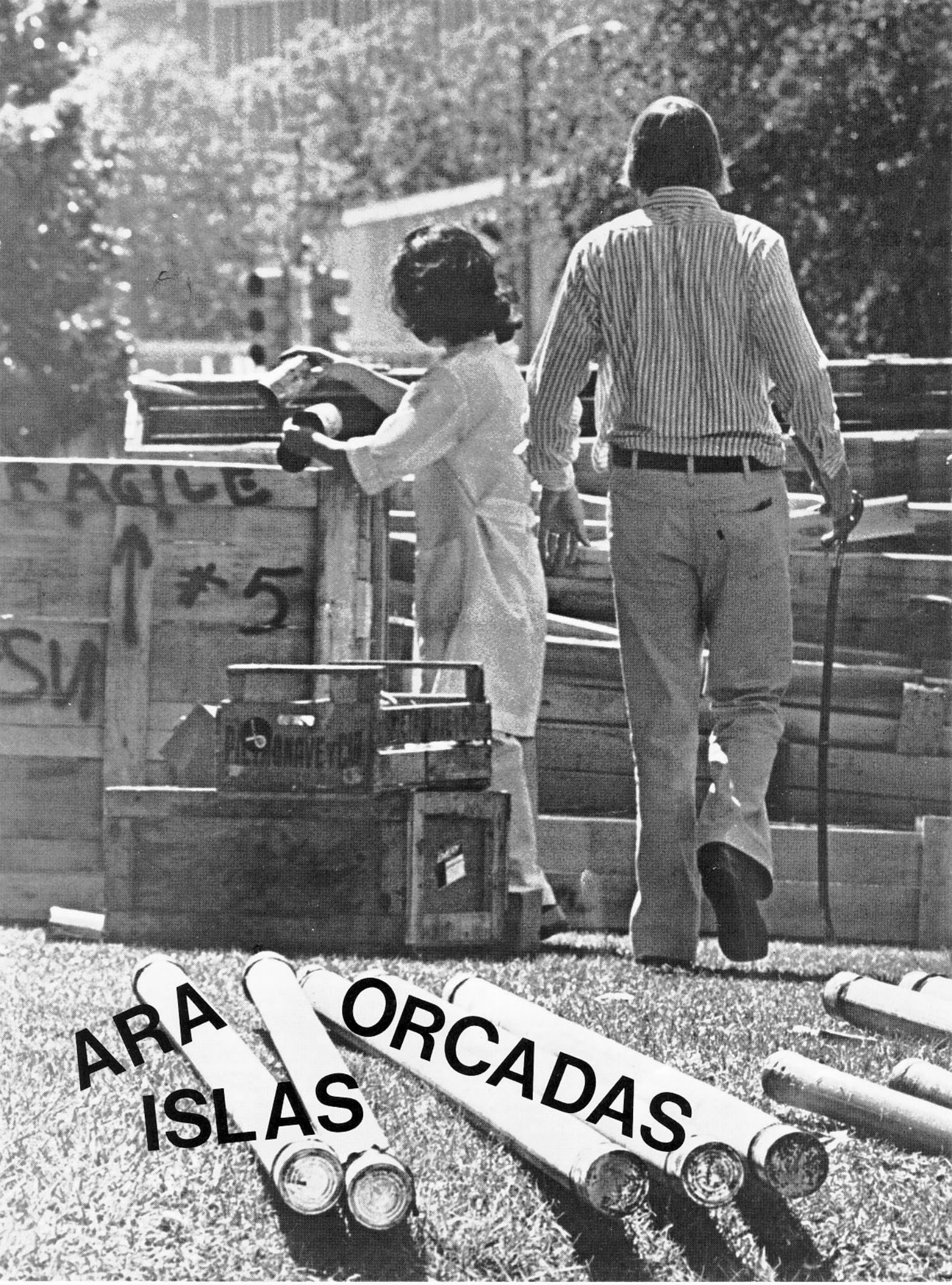
ARA
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ARA ISLAS ORCADAS CRUISE 1277 SEDIMENT DESCRIPTIONS

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COVER: Sherwood "Woody" Wise and Yang Ja Chung at work during the uncrating of cores received at FSU from ARA ISLAS ORCADAS cruise 1578. (Photography courtesy of Alan Brown and Tom Fellers.)

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INTRODUCTION

The purpose of this volume, the ninth in a series of similar publications (Goodell, 1964, 1965, 1968; Frakes, 1971, 1973; Cassidy et al., 1977a, 1977b; Kaharoeddin, 1978), is to continue a presentation to the research community of sediment core descriptions and attendant data of cored and otherwise obtained sediments retrieved in waters of the Southern Ocean aboard the research vessel, ARA ISLAS ORCADAS (formerly, USNS ELTANIN), as a part of the circumpolar survey begun by ELTANIN in 1962 (see issue of Antarctic Journal of the United States, Vol. 8, No. 3, 1973).

The data presented herein are concerned with the results of coring activities aboard cruise 1277 of ISLAS ORCADAS, the third marine geology coring cruise of this vessel sponsored under the terms of a joint Argentine-United States agreement (now terminated), and have been organized in format similar to that of the previous volumes of ISLAS ORCADAS core descriptions (Cassidy et al., 1977b; Kaharoeddin, 1978). These data include 1) a brief summary of the coring objectives of the cruise, together with a discussion of core recovery; 2) a table and map of station location data for materials retrieved; 3) a table of tentative age dates for each piston core; 4) an explanation of the laboratory procedures and descriptive criteria used in the description of the sediments, and 5) lithologic descriptions of the piston and trigger cores, and the piston and trigger core bagged samples. A few modifications have been made to the core describing procedures used for previous volumes, and these are discussed in this volume.

It will be noted that piston core sediments described herein are 31% disturbed due to flow-in with respect to total core length (compared to 11% and 3%, cruises 0775 and 1176, respectively). This is attributed partially to difficulties encountered aboard ship while attempting to core using the "breakaway" piston.

Sediments recovered by the two final coring cruises of ISLAS ORCADAS (cruises 1578 and 1678) are presently being described. These descriptions will be published as separate volumes, and preliminary descriptive information will be furnished upon request as it becomes available.

ACKNOWLEDGEMENTS

The editor and authors are extremely grateful to the many persons whose contributions were essential to the completion of this volume of core descriptions. Paul F. Ciesielski, Duncan T. MacKenzie, and Jan F. Smolko served for a limited time as members of the "core crew", and their experience, both as shipboard participants on other cruises of ISLAS ORCADAS and as core describers of cores from these cruises, was an invaluable aid to those of us taking this work to completion.

The coring operation aboard ship was supervised by David R. DeFelice and Duncan T. MacKenzie, whose participation during the cruise was funded by National Science Foundation grant OPP 74-20109 to Sherwood W. Wise, Jr.

Proofreading and photographic assistance were provided by Thomas J. Fellers. Typing duties were divided among three keyboard artists: LaVerne D. Lamb, Louise M. Cox, and Joy C. Wooten. Drafting succumbed to the efforts of Rosemarie K. Raymond.

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ISLAS ORCADAS CRUISE 1277

Cruise Objectives

Cruise 1276 of ARA ISLAS ORCADAS, the third multidisciplinary cruise of this vessel from which cores were received by the Antarctic Research Facility, was a 60 day endeavor while "steaming" 8,250 nautical miles. The cruise began at Cape Town, South Africa on January 3, 1977 and terminated at Buenos Aires, Argentina on March 4, 1977. Figure 1 shows the area covered by the coring operation. A detailed summary of the cruise and its accomplishments is documented in Gordon and LaBreque (1977).

The primary area of investigation was that portion of the South Atlantic-Antarctic Basin sector of the Southern Ocean, an area bounded by an east-west trending mid-oceanic ridge system to the north, and by the Antarctic continent to the south and west. These bathymetric features are presumed to create a partially restricted oceanographic and sedimentary environment with unique sedimentary implications.

The objectives of the coring program were:

1. To obtain a closely-spaced series of cores along a generally trending, north-south traverse normal to the Polar Front in order to monitor, using microfossils, the latitudinal fluctuations with time of this oceanographic feature;

2. To obtain a set of cores east of the Maud Rise - an area from which few cores have been retrieved;

3. To core as close as possible to the Antarctic continental shelf, thereby enhancing our understanding of nearshore glacial marine sedimentation in this area;

4. To obtain cores on the Maud Rise in order to supplement our knowledge of the local history of the carbonate compensation depth;

5. To core within the Weddell Gyre as a means of interpreting the relationship between this complex oceanographic feature and the sedimentation processes in the area, and

6. To collect samples that will be utilized in the study of paleothermometry and geochronology using the techniques of amino acid racemization.

Although ice conditions prevented coring on the continental shelf, core coverage was reasonably sufficient to meet the above objectives. All but one core were taken in conjunction with CTD stations in order to provide a maximum synthesis of sedimentary and hydrologic data.

No bottom photographs were taken on this cruise.

Core Recovery

A total of 44 complete piston cores were recovered aboard ARA ISLAS ORCADAS cruise 1277 by means of a modified Ewing piston corer using plastic liners. ("Complete" is defined herein to mean that a sample removed from these cores can be assigned an absolute interval value with respect to its distance down-core from the top, or 0 cm, end of the core.) Also recovered were 2 "bag" samples representing unsuccessful piston core attempts which, nevertheless, did manage to obtain sediments lodged in the core cutter and/or catcher. Bagged sediments are, in effect, surface sediments, and descriptions of them are included in the interest of publicizing their availability to the research community.

Similarly, a total of 26 complete trigger cores were recovered aboard this cruise. Descriptions of these sediments, together with those of 12 "bag" samples, are according to the same criteria used for the description of the piston cores. It must be mentioned that several of the bagged trigger cores are ones which originally were recovered intact in their liners, but later required bagging as a result of handling mishaps - either aboard ship, or during the core-cutting procedure. In a few cases, bagged trigger core recovery was also necessitated by the discovery, upon the opening of a "core" but a few centimeters in length, that the sediment within was thoroughly disturbed, having no top or bottom orientation.

All latitudes, longtitudes, and water depths given for the trigger cores correspond to those of their associated piston cores. It is to be noted, however, that cores retrieved aboard

ARA ISLAS ORCADAS cruise 1277 are numbered consecutively in the order in which they were taken, and do not correspond with ship station numbers - as is the case for previous coring cruises of this vessel.

Trigger core and trigger core bag sample descriptions follow those of the piston cores, and are in turn followed by the descriptions of piston core bag samples.

Table 1 (page 5) lists core numbers, and latitude, longitude, length and water depth of cores. With respect to these data, it should be noted that assignments for latitude, longitude and water depth are not based on position data from PDR (Precision Depth Recorder) "hit" times of the coring apparatus, but instead, on the position of the vessel at the time of the beginning of descent of the coring apparatus (as determined from the computer output of the ship's Daily Data Sheets). This is done under the assumption that the initial descent of the coring rig was probably more directly over the point of bottom contact of the corer than would be the ship at "hit" time. During the descent, the ship may drift considerably; however, rapid "paying out" of the cable during drift time allows for a more or less vertical descent of the coring apparatus beneath the original ship position, with the trajectory of the cable being that of a long, sweeping arc from ship to point of bottom contact. Therefore, the fathometer reading at "hit" time indicates water depth under the ship, and not necessarily at the coring point. Water depths are recorded in fathoms and the depth in fathoms has been converted to meters by a x1.8288 conversion factor.

It is to be further noted that water depths for ship stations are "corrected" in the sense that they have been interpolated with respect to ship position at the time of initial descent of the coring apparatus, as explained above; they have not been corrected, however, with respect to the Matthews corrections tables (Matthews, 1939), and therefore are not, in a strict sense, true corrections.

Core Shipment and Handling

All cores retrieved aboard ARA ISLAS ORCADAS cruise 1276 were shipped by non-refrigerated ocean freight and truck transport to the FSU Facility, with the exception of a few core sections that were shipped by air freight. Upon arrival, the cores were stored in the Facility's refrigerated storage room, maintained at 2°C. Core splitting of the plastic-encased, 3-meter sections of cored sediment is accomplished using an adjustable, track-operated, overhead, radial power saw (Cassidy and DeVore, 1973). The sediment core is manually split after the saw cuts through only the thickness of the cellulose acetate butyrate (CAB) plastic liner, on opposite sides. Following description and sampling, the two half-sections of core are heat-sealed in polyethylene "sleeving" to prevent dessication and then returned to refrigerated storage.

TABLE 1

STATION LOCATIONS, CORRESPONDING WATER DEPTHS, AND CORE RECOVERY FOR ARA ISLAS ORCADAS CRUISE 1277

Core Number	Latitude(S)	Longitude	Water Depth(m)	Core Length (cm): PC	TC
1	39°31.8'	16°51.5'(E)	4806	1137	56
2	45°02.1'	22°28.2'(E)	4806	417	47
3	46°59.7'	21°55.5'(E)	5055	45	NR
4	47°59.3'	21°34.9'(E)	4559	590	BAG
5	49°01.0'	21°21.2'(E)	4610	1212	NR
6	49°29.9'	21°10.6'(E)	4243	1194	BAG
7	49°59.4'	21°06.9'(E)	4153	1187	BAG
8	50°32.5'	20°53.0'(E)	4492	1178	NR
9	51°00.8'	20°44.3'(E)	4151	1181	NR
10	52°01.1'	20°28.3'(E)	2740	1680	NR
11	53°00.0'	20°05.6'(E)	3027	988	BAG
12	54°00.6'	19°47.5'(E)	3178	1170	15
13	56°16.0'	19°04.2'(E)	4100	1066	21
14	58°26.5'	18°14.9'(E)	4682	984	10
15	59°31.5'	17°50.6'(E)	5066	1727	57
16	61°01.8'	17°26.7'(E)	4921	1801	NR
17	61°59.3'	16°57.7'(E)	4998	1705	NR
18	63°00.1'	16°37.1'(E)	5022	1671	NR
19	63°59.7'	16°11.2'(E)	4949	1674	NR
20	65°00.1'	15°44.6'(E)	3886	1304	59
21	66°00.8'	15°20.4'(E)	3603	1172	55
22	67°01.2'	14°52.4'(E)	3904	1194	49
23	67°53.8'	14°34.8'(E)	3698	924	54
24	68°10.0'	11°58.8'(E)	1862	1180	BAG
25	68°36.5'	10°57.9'(E)	2015	1172	59
26	65°01.6'	09°11.0'(E)	4658	1732	59
27	62°56.0'	09°07.7'(E)	4846	1806	75
28	61°28.0'	09°11.0'(E)	5322	206	11
29	59°31.4'	09°00.0'(E)	4976	1211	BAG
30	60°01.2'	06°07.4'(E)	5229	1712	57
31	62°01.6'	04°09.5'(E)	5240	1791	57
32	63°00.4'	03°06.0'(E)	5227	1755	54
33	63°33.5'	02°28.7'(E)	4184	1650	25
34	64°28.8'	01°33.3'(E)	2679	960	57
35	64°27.3'	01°46.7'(E)	2527	1730	59
36	65°32.1'	00°27.9'(E)	3440	1344	55
37	66°30.5'	00°40.5'(W)	4473	1275	47
38B	67°29.4'	01°50.1'(W)	4444	BAG	BAG
39A	68°30.6'	03°05.1'(W)	4001	NR	BAG
39B	68°29.9'	03°05.7'(W)	4062	288	BAG
40	69°29.6'	04°19.7'(W)	2970	1200	64
41	69°59.9'	05°04.6'(W)	1873	1173	16
42	66°00.3'	15°00.7'(W)	4918	337	55
43	68°19.8'	23°58.9'(W)	4724	111	BAG
44	65°30.2'	18°31.6'(W)	4910	474	BAG
45	67°26.3'	22°41.2'(W)	478.	BAG	10
46	68°49.5'	28°38.3'(W)	4563	555	BAG

NR = No Recovery BAG = Bag Sample (see text, page 3)

Table 1 is intended to be used together with the core location map for this cruise (page 6), the core descriptions, and the notes concerning piston and trigger core recovery aboard cruise 1277. This approach will insure a knowledgeable evaluation of the data presented herein for the purpose of submitting sample requests.

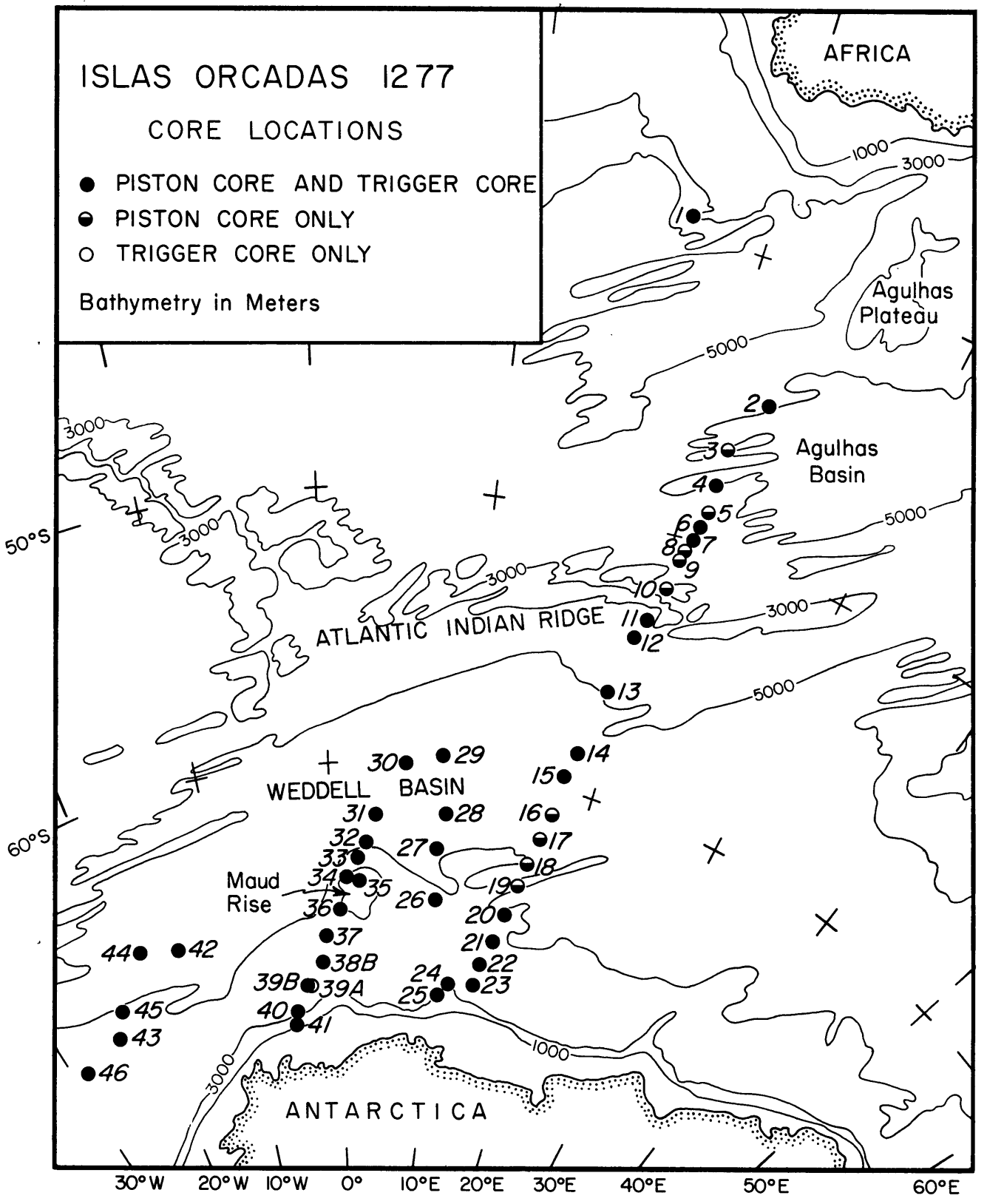

ISLAS ORCADAS 1277
CORE LOCATIONS
PISTON CORE AND TRIGGER CORE
PISTON CORE ONLY
TRIGGER CORE ONLY
Bathymetry in Meters
AFRICA
Agulhas Plateau
Agulhas Basin
ATLANTIC INDIAN RIDGE
WEDDELL BASIN
Maud Rise
ANTARCTICA
1000
3000
5000
50°S
60°S
30°W
20°W
10°W
0°
10°E
20°E
30°E
40°E
50°E
60°E

FIGURE 1

CORE DESCRIBING PROCEDURES

General Information

Procedures used for describing the cores listed in this volume are essentially the same as those of previous volumes (Cassidy et al.,1977b; Kaharoeddin, 1978). A few minor modifications have been necessary, and these are discussed in this chapter. Carbonate analyses, for example, were eliminated because the results are not used for classifying the sediments. Similar to the procedure outlined previously (Kaharoeddin, 1978), only the smear slide data are used in the naming of fine grain sediments. Although the smear slide analyses are only estimates of the compositional percentages, they generally are reliable for purposes of sediment classification.

For obvious reasons, cores should be described immediately after being opened. Almost half of the total number of cores described in this volume, however, were opened several months prior to being described due to the immediate needs of several investigators requiring samples. Fortunately, moisture loss, which often results in a change of the original sediment color, was minimized, due to the manner in which the cores are sealed and stored. Prior to the describing of the extensively sampled cores, a thin film of exposed sediment was scraped off the surface so that the original sediment color could be determined.

The description of each core consists of three types of information:

1. the primary information (latitude, longitude, water depth, core length, sea bottom conditions);

2. the main lithologic description (megascopic descriptions and smear slide analyses), and

3. information concerning core conditions that are not inherent to the lithologic character of the sediments.

Most of the primary information is obtained from the deck-log and the ship's daily data sheets (ship-log), except core length, which is measured by the core describers. References to core conditions not inherent to the lithologic character of the sediment usually call attention to problem situations such as: those involving the loss of a core section (e.g., piston core 1277-44), thus requiring an estimation of the length of missing sediment; an estimation of the length of bagged sediments from within the core - which must be taken into account for core length determination (e.g., piston core 1277-19); or, problems which may be the result of shipboard mixups in core liner marking and identification (e.g., piston core 1277-14). Conditions which seriously affect the core description and the value of the sediment for sampling are mentioned at the beginning of the description; those which are not critical to the description may appear at the end of the description. Occasionally, smear slides are biased toward either the fine or the coarse fraction, and this information is noted within the description of the unit.

Each piston core description is accompanied by a graphic log illustrating the main lithologies, boundaries, inclusions, sedimentary structures, and degrees of disturbances of the sedimentary units. The positions of the core section breaks are also indicated in the log in order to inform the investigator as to where samples should not be taken, since the cutting of cores into sections produces sediment disturbance. Not all information appearing in the written portion of the lithologic description is illustrated in the log. An attempt was made to place the lithologic log and the lithologic description of each sedimentary unit on the same page in order to facilitate the use of this volume. If necessary, the scale of the log was changed at appropriate depths.

The style of description for all trigger cores and bagged samples is basically the same as that of the piston core descriptions, but with minor differences. These differences are:

1. The graphic log is omitted from the trigger core descriptions, and

2. The weight of each bagged sample is included in its description.

In a few cases, a bagged trigger core sample represents surface sediment that was forced up into the head weight assembly of the coring apparatus during penetration, and therefore not enclosed within the core liner. The lengths of these bagged sediments were estimated, and then added to the tops of the trigger cores. The term "arbitrarily determined", as noted in the trigger core descriptions, should be interpreted as "estimated". The method used to estimate the length of a bagged sample is explained, below.

Core Preparation Procedure

Sediments recovered by ISLAS ORCADAS cruise 1277 are in the form of piston cores, trigger cores, and bagged sediments. A considerable number of the bagged sediments are derived from the ends of piston core sections. The true lengths of these bagged sediments were estimated by molding them into a cylinder the size of the core liner, and then measuring the height of the cylinder to the nearest centimeter. The same method is used to estimate the length of the trigger core bag samples.

Initial preparation of the cores for description begins with cutting of the core liners (see page 4). Following cutting, the sediment is manually split into two halves by the pulling of a stainless steel wire between the liner halves. The surfaces of each half are cleaned of plastic debris, and then scraped perpendicular to the core axis with a stainless steel spatula in order to expose the internal structures of the sediment. By studying these structures, disturbance of the sediment due to flow-in usually can be distinguished from disturbances caused by moderate washing, although sediments disturbed in either manner can exhibit vertical striations. Since samples may be taken from a core prior to its description, flow-in and other disturbances are recorded immediately after the core is opened.

Both core halves are tagged every 20 cm, with the estimated lengths of existing bagged sediments being taken into account. The error in a depth tag's position below a bagged portion of the core sediment is about 10% of the estimated length of the bagged sediment. For example, a bagged sample estimated to be 4 cm in length, and originating from just below 450 cm, would create a maximum error of ± 4 mm in the position of all depth tags below 450 cm.

Megascopic Examination and Description

Lithologic units were defined on the basis of compositional, textural, and other sedimentological characteristics. Data from both the smear slide analyses and the megascopic examination were combined in order to name the sediments according to the classification system described in the following chapter. If a smear slide was suspected of bias toward either the coarse or the fine fraction, a careful re-examination of the core was necessary.

Two or more consecutive units may have the same sediment name, but are described as separate units. Separations are made on the basis of sedimentological dissimilarities such as increased or decreased abundance of a major component, or an abundance of fine inclusions or laminae. These sedimentological changes often coincide with sharp color changes (e.g., piston core 1277-5). Contacts between units are not always sharp; often, they are gradational. Determinations of the positions of these contacts are based upon a close examination of the core and a careful evaluation of the results of various tests performed on the sediments.

The following are routine tests and examinations conducted in the study of core units:

1. A test for the presence of carbonate is conducted using dilute (1:20) hydrochloric acid. The reaction on the working slide is observed under a binocular microscope.

2. Hydroxylamine hydrochloride crystals are used to test for the presence of micronodules, or for manganese oxides and/or ferrous oxides occurring as staining material. (This test cannot be used to detect the presence of ferrous or manganese oxides in carbonate-rich sediments, since the carbonate also reacts with the crystals.) Observation of this reaction also makes use of the binocular microscope and a working slide.

3. The coarse fraction, if abundant, is separated by wet-sieving (62μm sieve) and studied under the binocular microscope.

4. The determination of the position of a gradational contact sometimes requires the preparation of several working slides of sediment obtained from close intervals in the vicinity of the contact. (Working slides are not reported in the core descriptions.)

5. A thorough megascopic examination is made of the core in order to determine its sedimentary structures, and the presence of dispersed inclusions or other components such as micronodules, pebbles, sedimentary clasts, or volcaniclastics.

The elements of description of each unit are presented in the following order: the upper and lower boundaries of the unit in centimeters, sediment name and color code, observable distribution of volcanic ash and manganese and/or ferrous micronodules and staining, internal structures within the unit (zone, layer, lamina, stringer, cast), inclusions (sedimentary clasts, pebbles, lapilli and breccia, manganese nodules), bioturbation, operational disturbances due to the coring operation and transportation, and the nature of the bottom contact of the unit.

The color of the sediment is determined by the visual comparison of fresh sediment with the Geological Society of America color chart. If the color of a sediment cannot be matched exactly with the color chart, the most closely matching color is used. Color changes within a unit can be described as being gradational or sharp (abrupt). Mottling refers to irregular spots of differing color within the sediment, and the color of mottling may be included in the description. Mottling usually occurs in diatomaceous ooze.

In addition, any variation in the abundance of a major component in a unit, observable either megascopically or through smear slide analyses, is given in the description. Minor constituents which are scattered within a unit are generally not well-represented on smear slides. These constituents (micro-manganese nodules, lapilli, volcanic ash, etc.) are identified on working slides. Their abundances are determined after thorough examination of the core, and described semi-quantitatively as sparsely scattered, common, or abundant. Manganese and ferrous oxides that occur as staining materials can be either in the form of small patches or spread uniformly within a certain interval. These stainings are described by three qualitative terms: slightly, moderately, or highly stained.

In describing the internal structures within a sedimentary unit, the stratigraphic position of each structure is noted, and, when applicable, the composition and the color are also described. In this volume, each structure is defined as follows: Layers have a thickness of between 1 to 10 cm, separated from the main unit by a discrete change in lithology and distinct planes of contact. Laminae are similar to layers, but have a thickness of less than 1 cm. Stringers are laminae which are discontinuous and often irregular in form. Casts are infillings of a depression made on top of a soft bed, and are commonly filled with coarse sediments.

Related to the internal structure are zones, and these are defined as small intervals (less than 20 cm) in which a notable change in the abundance of some components or inclusions in the unit can be detected, either through megascopic examination or in the smear slide analysis. In the description of a unit, the following sequence is used: zones, layers, laminae, stringers, and casts.

Inclusions within a unit are described in the following order:

1. Sedimentary clasts are usually described in detail including size, composition, color, compactness, and position in the core.

2. Manganese nodules are described as to their size and position.

3. Volcaniclastics are classified according to the textural classification of Wentworth and Williams (1932). Their position in the core is given, and sometimes, the rock type (pumice, scoriae) is also mentioned.

4. Pebbles are usually described only as to their size and position. Occasionally, rock type and roundness are also given. Coatings, encrustations, and cementations by manganese or ferrous oxides are common on clastics and volcaniclastics; these are mentioned when present.

Bioturbated sediments are described in terms of slightly, moderately, or highly bioturbated. The qualifiers can be approximated as follows:

slightly: less than 5% bioturbations

moderately: between 5% to 30% bioturbations

highly: 30% or more bioturbations

Operational disturbances are disturbances in the sediment usually occurring during the coring operation, transportation, and, occasionally, during the splitting of the core, resulting in total or partial loss of the primary sedimentary structures and the stratigraphic integrity of the sediment. The degree of the disturbance is based on the value of the sediment for sampling, and is described in terms of slightly, moderately or highly disturbed. Slightly disturbed sediments still retain most of their primary sedimentary structures, particularly along the central axis of the core. Moderately disturbed sediments have lost almost half of their original structures, and must be sampled carefully in order to be stratigraphically meaningful. Highly disturbed sediments have lost most or all of their primary structures; it is not recommended that these be sampled for stratigraphic study because of the mixing of sediment components. Highly mixed sediment that has randomly entered the core by suction during the coring operation is described as flow-in, and is usually characterized by vertical striations which can be traced from the base of the core.

Water entrapped in the liner, and which was not removed aboard ship, can wash the sediment along one side of the liner during transport. This disturbance is described as slightly or moderately washed along the side, and still can be sampled carefully for stratigraphic work. The term, highly washed along the side, is not used because the sediment is almost always highly disturbed. An uncommon disturbance occurs when the overlying sediment is dragged along the side of the liner. The sediment described in this manner also can be sampled carefully for stratigraphic work. For each unit, the most severe disturbance is listed first.

Smear Slide Analysis

The method used in this volume is similar to that used in the ARA ISLAS ORCADAS cruise 1176 core description volume (Kaharoeddin, 1978). The only modification to the procedure is the differentiation of feldspar from quartz, and the recognition of ebridians as a separate constituent.

The abundance of various components of sediment on the smear slides was estimated using petrographic microscopes capable of magnification up to 2000X and with options of using transmitted (plane) light, polarized light, phase contrast, and Nomarski differential interference contrast. For each smear slide, the following constituents are quantitatively estimated:

1. Minerals: quartz, feldspar, mica, heavy minerals, volcanic glass, glauconite, pyrite, micromanganese nodules, and zeolites.

2. Biogenic constituents: foraminifera, calcareous nannofossils, unspecified carbonate, diatoms, radiolarians, sponge spicules, silicoflagellates, and ebridians.

Quartz and feldspar are differentiated on the basis of the crystal habit and twinning of feldspar. Keratophyric particles generally can be distinguished, but, due to their mode of formation and often weak birefringence, they are grouped with volcanic glass. Included in micromanganese nodules are ferrous and manganese oxides which occur as staining materials on biogenic particles. Clay minerals, which have refractive indices very close to that of Canada balsam, are detected and estimated by means of phase contrast microscopy.

The percentage composition chart for rock and sediments, as prepared by Shvetsov (Terry and Chilingar, 1955), is used to estimate the abundance of the constituents of the sediments on the smear slides. Care is taken to account for void spaces in all estimates. An abundance ratio of the two most abundant components on a smear slide (e.g. diatoms and clay) is commonly determined before estimating the percentages of these components.

Almost all smear slides are analyzed by two or more observers. This procedure reduces both individual bias and the probability of misidentification, and increases the reliability of estimates. The estimate of any component can be less than one percent. If a component can be found regularly in most traverses on a smear slide, but its abundance is less than 1% according to the percentage composition chart (Terry and Chilingar, 1955), then the abundance of that component is recorded as <1%. If a component is rarely found on a smear slide, it is recorded as <<1%.

SEDIMENT CLASSIFICATION

The sediment classification scheme used in this volume is similar to that used for describing the cores from ARA ISLAS ORCADAS cruise 1176 (Kaharoeddin, 1978). Principles used in this classification are similar to those of the JOIDES classification. Important characteristics of this classification are: 1) sediment names are those in common usage; 2) the classification is strictly descriptive, and 3) the categories are based only on abundance estimates of the constituents as determined by smear slide examination, wet sieving, or megascopic examination. Factor analysis of smear slide data from cores of cruise 1176 showed that the present classification and the percentages of the components used to differentiate sediment groups are natural (Kaharoeddin, 1978).

The three major categories of sediment are (figure 2):

1. Pelagic sediments consisting of pelagic clay, siliceous ooze, calcareous ooze, and a mixture of siliceous and calcareous ooze;

2. Transitional sediments consisting of mixtures of biogenic and clastic sediments, and

3. Terrigeneous and volcanic detrital sediments.

General Rules

A. Sediments are named after their major constituent.

B. Lesser constituents which exceed 15% (except for glauconite which must exceed 10%) are used as qualifiers which precede the sediment name.

C. A maximum of two qualifiers may be used, the second being the most abundant.

Specific Rules

A. Pelagic Clay

This type of sediment accumulates at a very slow rate and generally has a brown hue. Authigenic components are common (equal to or greater than 5% in estimated abundance) in this sediment; however, they might be distributed in such a manner that they are not found on the smear slide or are present only in a small quantity. Usually, a careful examination of the core, aided by the smear slide analysis, is necessary to determine whether or not a sediment is a pelagic clay. The primary components of pelagic clay are clay minerals and silt size quartz particles, and it may contain less than 30% biogenic components. A qualifier cannot be added to pelagic clay; hence, pelagic clay containing 25% diatoms is not called diatomaceous, pelagic clay.

B. Pelagic Biogenic Sediments

Included in this category are sediments containing at least 30% biogenic skeletons, but containing less than 30% silt and clay. They are named according to their principal fossil types: diatomaceous ooze, radiolarian ooze, siliceous ooze, foraminiferal ooze, nannofossil ooze, or calcareous ooze. A second (lesser) biogenic component may be used as a qualifier if present more than 15%. The following rules are applicable for naming the pelagic biogenic sediments:

1. If both the principal and lesser fossil types are similar in their chemical composition (i.e., calcareous or siliceous), and if the ratio of the lesser to the principal fossil type exceeds 0.75, the sediment is called siliceous ooze or calcareous ooze, depending on its chemical composition.

Examples:

Quartz	9%	Quartz	5%
Feldspar	1%	Feldspar	<1%
Volcanic glass	1%	Clay	3%
Glauconite	7%	Foraminifera	40%
Diatoms	45%	Calcareous nannos	38%
Radiolarians	35%	Diatoms	13%
Sponge spicules	2%	Radiolarians	1%
$\frac{\text{Radiolarians}}{\text{Diatoms}}$ = .78		$\frac{\text{Calcareous nannos}}{\text{Foraminifera}}$ = .95	

:hence, siliceous ooze

:hence, calcareous ooze

Quartz	9%
Feldspar	1%
Clay	10%
Volcanic glass	2%
Glauconite	3%
Diatoms	50%
Radiolarians	25%
Silicoflagellates	<1%

$$\frac{\text{Radiolarians}}{\text{Diatoms}} = 0.5$$

:hence, radiolarian, diatomaceous ooze

2. Calcareous sediments which have unspecified carbonate more than one-third of the total carbonate are also called calcareous ooze.

3. If the principal and lesser fossil types differ in chemical composition, and if the ratio of the lesser to the principal fossil type exceeds 0.75, then both components are used in the sediment name joined by a hyphen.

Example:

Quartz	8%
Feldspar	<1%
Clay	7%
Volcanic glass	15%
Carbonate unspecified	7%
Foraminifera	30%
Diatoms	28%
Radiolarians	5%

$$\frac{\text{Diatoms}}{\text{Foraminifera}} = .93$$

:hence, diatomaceous-foraminiferal ooze

C. Transitional Biogenic Sediments

Included in this category are sediments containing at least 30% silt and clay. Two subdivisions are recognized: the transitional siliceous sediments having at least 15% diatoms but less than 30% calcareous skeletons, and transitional calcareous sediments having at least 30% calcareous skeletons. The following rules apply for naming the sediments in this category:

1. A transitional siliceous sediment is called muddy, diatomaceous ooze if diatoms are more than total silt and clay; otherwise, it is called diatomaceous mud.

2. Sediments in the transitional calcareous group are called marly, calcareous ooze.

3. The detrital component of a transitional siliceous sediment is specified according to the textural parameters as outlined for terrigenous sediments.

Example:

Quartz	35%	} e.g., sand 25%, silt 12%
Feldspar	2%	}
Clay	26%	
Volcanic glass	3%	
Glauconite	5%	
Diatoms	23%	
Radiolarians	5%	
Sponge spicules	1%	

:hence, diatomaceous, sandy mud

D. Terrigenous Detrital Sediments

Sediments in this category are classified according to their texture using the standard size classes of sediment. Particles greater than 2 mm are called pebbles, and the size of an individual pebble is given in the core description. The following rules apply for naming sediments in this category:

1. Sediments lacking in pebbles, or containing less than 30% pebbles are classified according to the triangular classification as shown in figure 3. The qualifier "pebbly" is applicable if pebbles are more than 15%.

2. Sediments containing more than 30% pebbles are called pebbles (very coarse, coarse, medium, fine or very fine; figure 4) with appropriate qualifiers (e.g. sandy, etc.). Sediments containing more than 80% pebbles have no qualifiers.

E. Volcanic Detrital Sediments

This sediment group is classified according to the textural and compositional classification of Wentworth and Williams (1932).

1. The nomenclature and the size limits used are as follows:

volcanic breccia:	greater than 32 mm
volcanic lapilli:	less than 32 mm, greater than 4 mm
volcanic ash:	less than 4 mm

2. The volcanic detrital sediments can have biogenic qualifiers by adding the term "bearing" to the qualifier; example: diatom-bearing, volcanic ash. The same term is also added if the volcanic detrital is used as a qualifier to another group of sediments; example: ash-bearing, diatomaceous ooze.

CLASSIFICATION OF MARINE SEDIMENTS

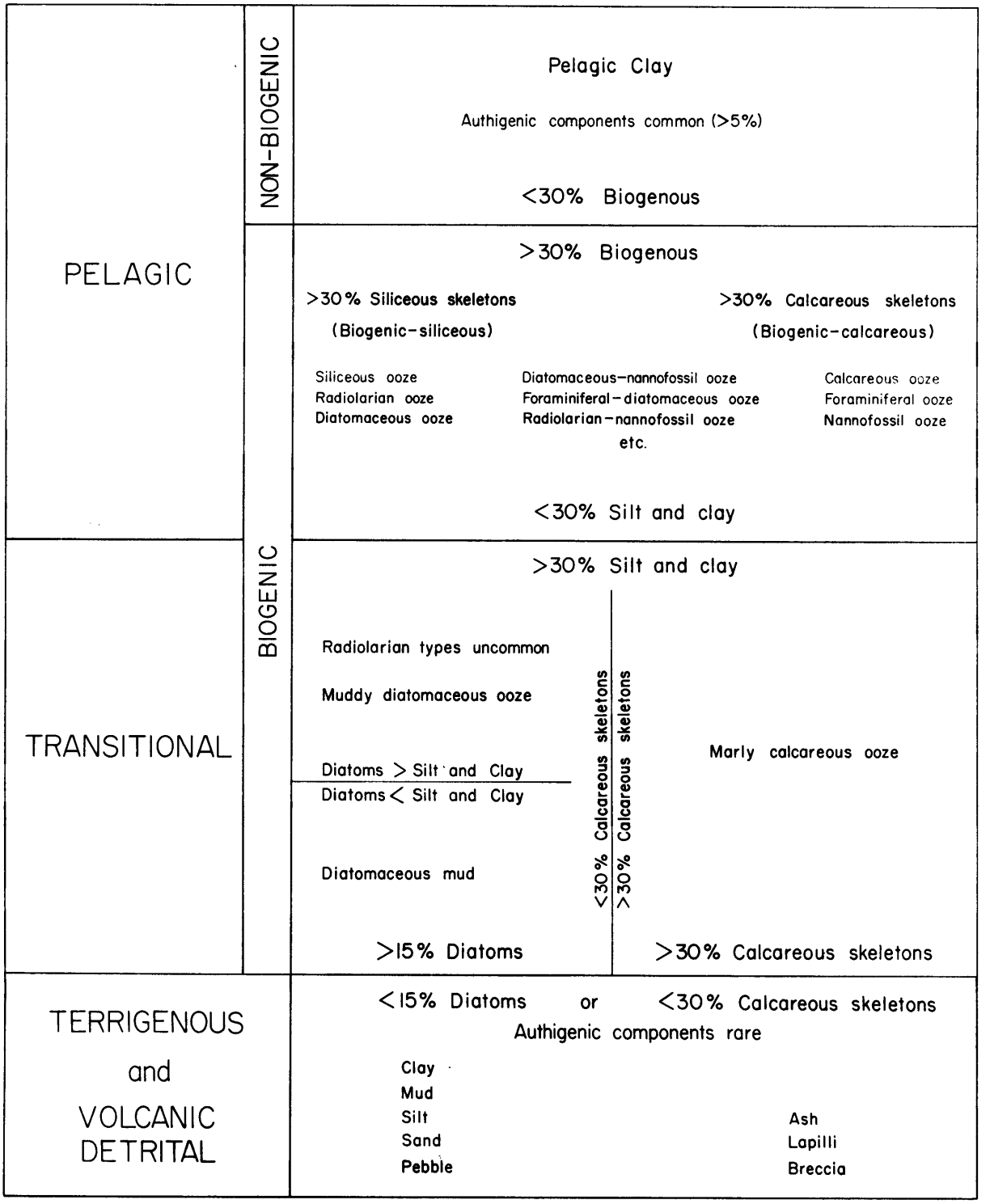
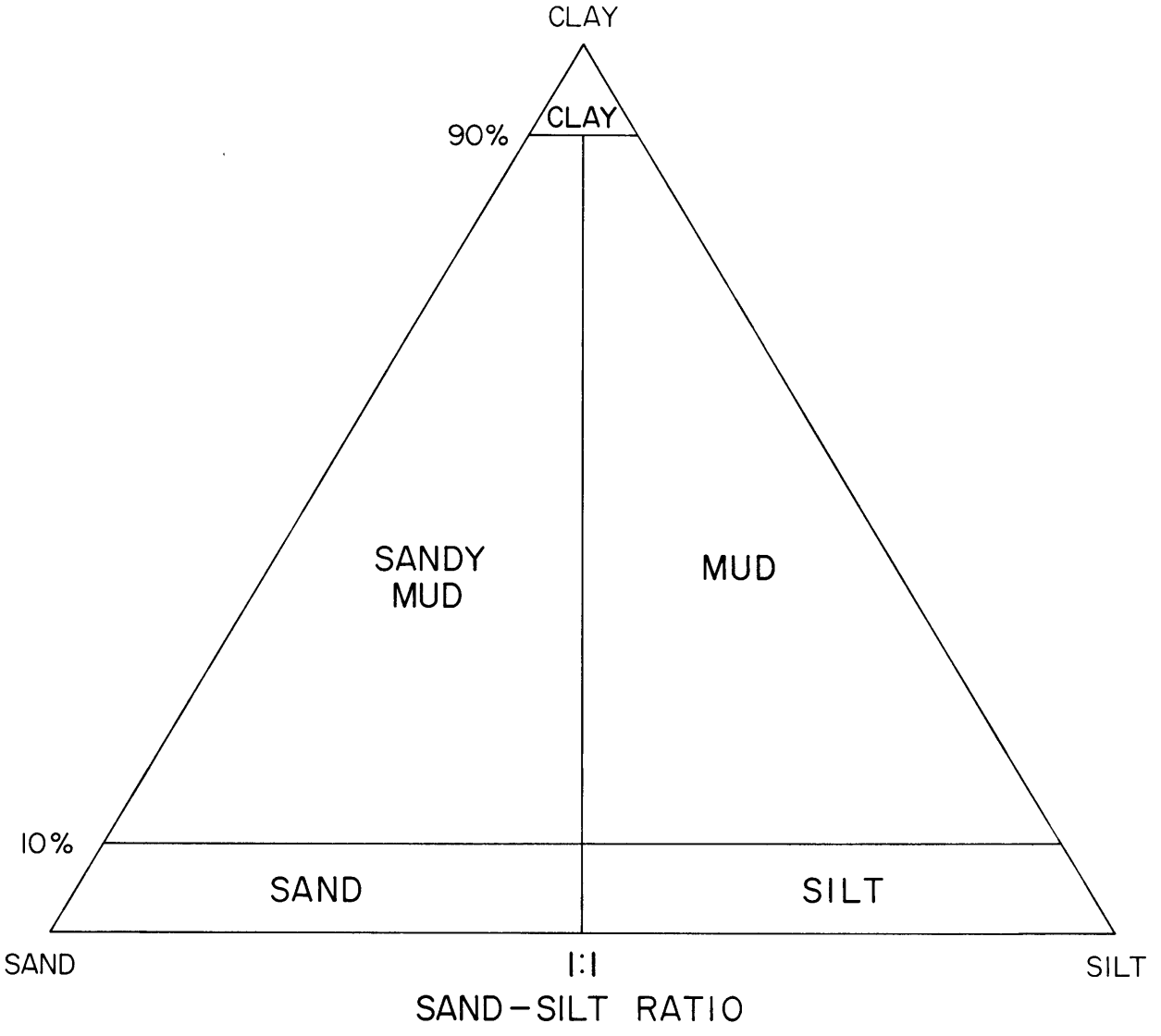


FIGURE 2



CLASSIFICATION OF CLASTIC SEDIMENTS

FIGURE 3

LIMITING SIZE in mm	SIZE CLASS	
64		
	VERY COARSE	PEBBLES
32		
	COARSE	
16		
	MEDIUM	
8		
	FINE	
4		
	VERY FINE	
2		
	VERY COARSE	SAND
1		
	COARSE	
.5		
	MEDIUM	
.25		
	FINE	
.125		
	VERY FINE	
.062		
	COARSE	SILT
.031		
	MEDIUM	
.016		
	FINE	
.008		
	VERY FINE	
.004		
	CLAY	

STANDARD SIZE CLASSES OF SEDIMENT
(MODIFIED AFTER FRIEDMAN AND SANDERS, 1978)

FIGURE 4

BASAL SEDIMENT AGES

OF ISLAS ORCADAS CRUISE 1277 PISTON CORES

The following text is that of an article appearing in the Antarctic Journal of the United States (DeFelice, 1978), and has been reproduced in this volume by consent of the author. References cited are to be found in the references section of this volume; italicized statements are those which have been added to the original text.

> "Preliminary basal sediment ages for 39 of the 46 piston cores recovered on ARA ISLAS ORCADAS cruise 12 *(Figure 1, this volume)* are presented here to aid others working on southern-ocean-oriented research. (Seven cores were found to be barren of microfossils diagnostic for age determination.) Cruise 12 began in Capetown, South Africa, in January 1977 and ended in March 1977 in Buenos Aires, Argentina. The objectives of the coring operation were to improve core control in the southeast sector of the South Atlantic Ocean as a means of increasing understanding of the depositional history of the area. Most cores were taken in conjunction with physical oceanographic stations along geophysical seismic tracts, allowing for the integration of sedimentologic, hydrologic, and structural data. The table *(Table 2, this volume)* lists piston core number, latitude, longitude, water depth, sample interval, core length, and basal age.
>
> Sampling: Samples were taken within 6 centimeters of the base in 44 of the 46 piston cores (recovery in core 38 was limited to mud at the base of the piston; only core catcher sediment was retrieved from core 45). Samples were also taken from core catcher and/or cutter (C/C) sediment wherever possible. Cores having disturbed bases were sampled at the base of the undisturbed section as well. In all but one core (core 18), biostratigraphic examination of samples from the C/C, core base, and the base of the undisturbed section has yielded similar ages.
>
> Cores that were found to be barren at the base were sampled and examined whenever possible at 20-centimeter intervals farther up the core until microfossils, diagnostic for age determination, were found. For these cores (1, 20, 24), the ages given in the table may not be basal ages and are given only to offer rough estimates of sedimentation rate. These cores are labeled in the table.
>
> Laboratory: Smear slides were made of the sampled material and were examined for their diatom, silicoflagellate, and calcareous nannofossil content. The intervals were then age-dated using the biostratigraphic zonations defined by McCollum (1975) for diatoms, and Weaver's (1976) modification of McCollum's zonation was used whenever possible for the early Pliocene; Ciesielski (1975) for silicoflagellates; and Wise and Wind (1977) for calcareous nannofossils.
>
> Because description and thorough biostratigraphic examination of each core had not been completed at the time of preparation of this article, these basal age dates must be considered preliminary. For many cores, age dates were determined on the basis of only one or two samples. It is difficult without further, more thorough examination of the cores to realize fully the extent of reworking and contamination factors that would lead to improper age assignments. Many samples taken from the southernmost cores of cruise 12 indicate the occurrence of intense reworking, possibly due to turbidite deposition in the southern Weddell Basin."

An important comment must be made concerning the table of age dates (table 2) presented in this chapter. As pointed out by DeFelice, the core descriptions had not been completed at the time of preparation of his article, therefore necessitating the use of data from undescribed, partially described, or described but unchecked, cores. Upon the completion

of the core descriptions, it was necessary to revise the table extensively with regard to core lengths and sample interval depths. These revisions, however, do not alter the assigned ages.

Personal communication with Paul F. Ciesielski (University of Georgia) at the time this volume was going to press emphasizes that the assigned basal ages are preliminary. Research is in progress by Ciesielski and Michael T. Ledbetter (University of Georgia) which will provide reconnaissance scale, paleomagnetic-biostratigraphic data for all ARA ISLAS ORCADAS piston cores recovered during the five U.S. coring cruises (cruises 0775, 1176, 1277, 1578 and 1678; approximately 250 cores). A review of their data obtained thus far from eleven of the cruise 1277 cores indicates a difference in the age interpretation for some cores, and confirms the age assignments of DeFelice for other cores. For example, the Late Miocene ages, as determined by DeFelice, for cores 15, 21, 26, and 33 are in agreement with the interpretations of Ciesielski and Ledbetter, as are the Middle Miocene ages for cores 20, 25, and 36. Ciesielski and Ledbetter, however, present a Late Miocene age assignment for cores 19, 30, 31, and 32, which differs from the ages reported by DeFelice (table 2).

It is important to note that the revised basal ages for these four cores, as presented by Ciesielski and Ledbetter, are based upon the diatom flora contained in the core sediments, and are further confirmed by up-core biostratigraphic and magneto-stratigraphic studies of the core samples.

TABLE 2

BASAL SEDIMENT AGES OF PISTON CORES

Piston Core Number	Latitude(S)	Longitude	Water Depth(m)	Sample Interval(cm)	Sediment Lithology**	Core Length(cm)	Age
1	39°31.8'	16°51.5'(E)	4806	79*;676;1136;C/C	PC	1137	Late Pliocene
2	45°02.1'	22°28.2'(E)	4806	416;C/C	PC	417	Late Pliocene
3	46°59.7'	21°55.5'(E)	5055	39;C/C	PC	45	Late Pliocene
4	47°59.3'	21°34.9'(E)	4559	519;588;C/C	DO	590	Quaternary
5	49°01.0'	21°21.2'(E)	4610	919;1208;C/C	DO	1212	Quaternary
6	49°29.9'	21°10.6'(E)	4243	1059;1193;C/C	DO	1194	Quaternary
7	49°59.4'	21°06.9'(E)	4153	1183;C/C	DO	1187	Quaternary
8	50°32.5'	20°53.0'(E)	4492	1175;C/C	ABDO	1178	Quaternary
9	51°00.8'	20°44.3'(E)	4151	1180;C/C	DO	1181	Quaternary
10	52°01.1'	20°28.3'(E)	2740	1678;C/C	DO	1680	Quaternary
11	53°00.0'	20°05.6'(E)	3027	377;986;C/C	DO	988	Quaternary
12	54°00.6'	19°47.5'(E)	3178	1019;1169;C/C	DO	1170	Quaternary
13	56°16.0'	19°04.2'(E)	4100	821;1065;C/C	DO	1066	Early Pliocene
14	58°26.5'	18°14.9'(E)	4682	983;C/C	NO	984	Paleocene (nanno ooze)
15	59°31.5'	17°50.6'(E)	5066	30;1725;C/C	M	1727	Late Miocene
16	61°01.8'	17°26.7'(E)	4921	1491;1800;C/C	DM	1801	Early Pliocene
17	61°59.3'	16°57.7'(E)	4998	1701;C/C	PC	1705	Early Pliocene (reworked Miocene)
18	63°00.1'	16°37.1'(E)	5022	42 1670;C/C	PC	1671	Late Pliocene Early Pliocene (reworked Miocene)
19	63°59.7'	16°11.2'(E)	4949	1038;1673;C/C	M	1674	Early Pliocene (reworked Miocene)
20	65°00.1'	15°44.6'(E)	3886	461*; 891; 1303; C/C	PC	1304	Middle Miocene?
21	66°00.8'	15°20.4'(E)	3603	990;1171;C/C	PC	1172	Late Miocene
22	67°01.2'	14°52.4'(E)	3904	1193;C/C	M	1194	Early Pliocene
23	67°53.8'	14°34.8'(E)	3698	43;923;C/C	M	924	BARREN
24	68°10.0'	11°58.8'(E)	1862	459*;559;1179;C/C	M	1180	Quaternary
25	68°36.5'	10°57.9'(E)	2015	841;1171;C/C	MDO	1172	Middle Miocene
26	65°01.6'	09°11.0'(E)	4658	1081;1731;C/C	PC	1732	Late Miocene
27	62°56.0'	09°07.7'(E)	4846	1805;C/C	MDO	1806	Early Pliocene (reworked Miocene)
28	61°28.0'	09°11.0'(E)	5322	205;C/C	PC	206	Quaternary
29	59°31.4'	09°00.0'(E)	4976	579;1210;C/C	PC	1211	BARREN
30	60°01.2'	06°07.4'(E)	5229	1709;C/C	DM	1712	Early Pliocene (reworked Miocene)
31	62°01.6'	04°09.5'(E)	5240	1731;1790;C/C	M	1791	Early Pliocene (reworked Miocene)
32	63°00.4'	03°06.0'(E)	5227	1439;1754;C/C	DM	1755	Early Pliocene (reworked Miocene)
33	63°33.5'	02°28.7'(E)	4184	9;1649;C/C	PC	1650	Late Miocene (probably reworked)
34	64°28.8'	01°33.3'(E)	2679	488;959;C/C	DO	960	Early Pliocene
35	64°27.3'	01°46.7'(E)	2527	119;1724	DO	1730	Early Pliocene
36	65°32.1'	00°27.9'(E)	3440	495;1343	MDO	1344	Middle Miocene
37	66°30.5'	00°40.5'(W)	4473	1274	S	1275	Early Pliocene (reworked Miocene)
38B	67°29.4'	01°50.1'(W)	4444	Mud at Base of Piston	S	BAG	Quaternary
39B	68°29.9'	03°05.7'(W)	4062	286;C/C	ABS	288	Quaternary
40	69°29.6'	04°19.7'(W)	2970	1199;C/C	M	1200	Quaternary
41	69°59.9'	05°04.6'(W)	1873	259;1171	M	1173	Quaternary
42	66°00.3'	15°00.7'(W)	4918	334;C/C	S	337	BARREN
43	68°19.8'	23°58.9'(W)	4724	109;C/C	M	111	BARREN
44	65°30.2'	18°31.6'(W)	4910	473;C/C	PC	474	BARREN
45	67°26.3'	22°41.2'(W)	4786	C/C	PC	BAG	BARREN
46	68°49.5'	28°38.3'(W)	4563	552;C/C	PC	555	BARREN

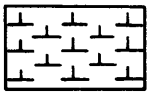
*Core date based on this interval. All intervals below this interval were found to be barren of microfossils diagnostic for age determination. Ages assigned may not be basal ages.

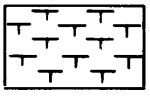
**Abbreviated as follows: PC = pelagic clay; M = mud; DM = diatomaceous mud; S = sand; ABS = ash-bearing sand; NO = nannofossil ooze; DO = diatomaceous ooze; MDO = muddy, diatomaceous ooze; ABDO = ash-bearing, diatomaceous ooze

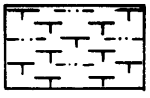
NOTE: In cores 8, 15, 16, 27, and 30, the lithology of the C/C (core cutter and/or catcher) sample differs slightly from that of the other sampled intervals within the core. (See descriptions of piston core bag samples beginning on page 99.)

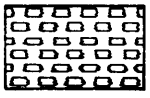
KEY

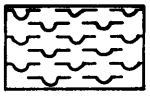
SYMBOLS USED FOR CORE DESCRIPTIONS

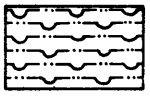

Nannofossil ooze

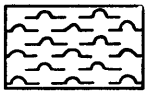

Foraminiferal ooze

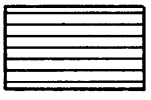

Marly, foraminiferal ooze

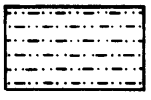

Calcareous ooze

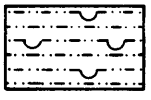

Diatomaceous ooze

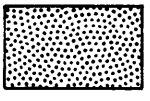

Muddy, diatomaceous ooze

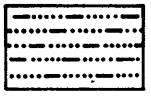

Radiolarian ooze


Pelagic clay


Mud


Diatomaceous mud


Sand

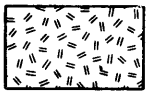

Silt

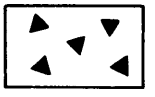
Gradational contact

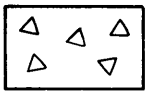
Sharp contact

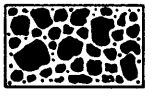
303 Core section "breaks"

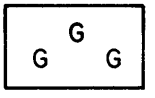
SC Scale change


Volcanic ash
(common to abundant)

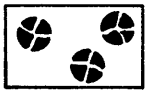

Lapilli

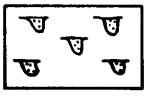

Breccia

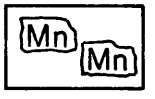

Pebbles



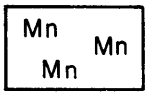
Glauconite


Sedimentary clasts


Sedimentary casts

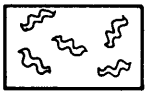


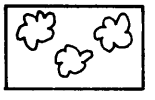
Manganese nodules



Micro-manganese nodules
(common to abundant)
Manganese oxide stained
(moderately to highly)

Manganese pavement

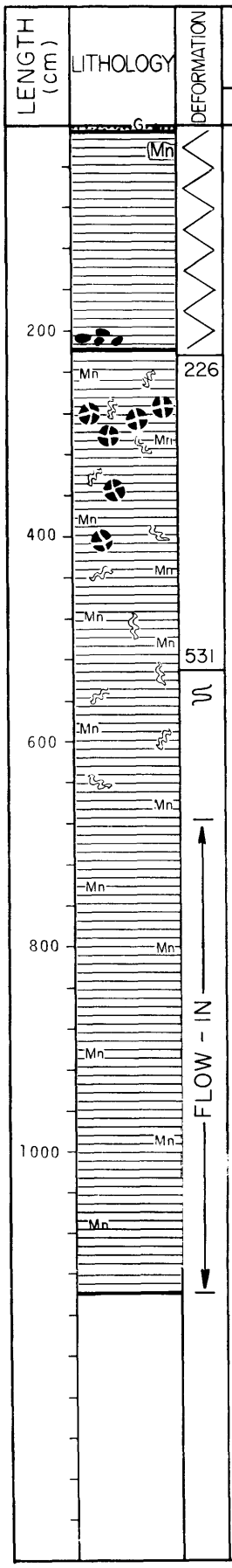

Bioturbation


Mottling


Slightly disturbed


Moderately to highly disturbed

ISLAS ORCADAS PC 1277-1



LATITUDE: 39°31.8' S CORR. DEPTH: 4806 M, 2628 FM

LONGITUDE: 16°51.5' E CORE LENGTH: 1137 CM

LITHOLOGIC DESCRIPTION

0-4 cm: Glauconitic sand, olive gray (5Y 3/2); coarse fraction composed predominantly of fine, sand-size, rounded glauconite, quartz, and feldspar particles; 5 mm pebble between 0-1 cm, coated with manganese oxides; sharp contact. NOTE: Smear slide is biased toward the fine fraction.

smear slide:	3 cm
Quartz and Feldspar	20
Clay	56
Volcanic glass	8
Glauconite	8
Carbonate unspecified	1
Foraminifera	<1
Diatoms	2
Radiolarians	<1
Sponge spicules	5
Silicoflagellates	<1

4-220 cm: Pelagic clay, moderate yellowish brown (10YR 5/4); abundant glauconite throughout; layer with high glauconitic sand content between 205-215 cm; 2 cm manganese nodule between 24-26 cm; several pebbles up to 1 cm, coated with manganese oxides, between 210-215 cm; the glauconite, the layer of glauconitic sand, manganese nodules, and the pebbles are not in their original position due to the nature of disturbance; unit is severely disturbed; core catcher lodged inside the core liner, trapping some sediment from the overlying unit; during pull out, this trapped sediment was mixed with the original sediment until the core catcher became dislodged between 200-215 cm; sharp contact.

smear slides:	28 cm	209 cm
Quartz and Feldspar	20	30
Clay	51	10
Volcanic glass	7	2
Glauconite	5	55
Carbonate unspecified	4	1
Calcareous nannos	-	1
Foraminifera	1	-
Diatoms	3	<1
Radiolarians	1	-
Sponge spicules	8	<1

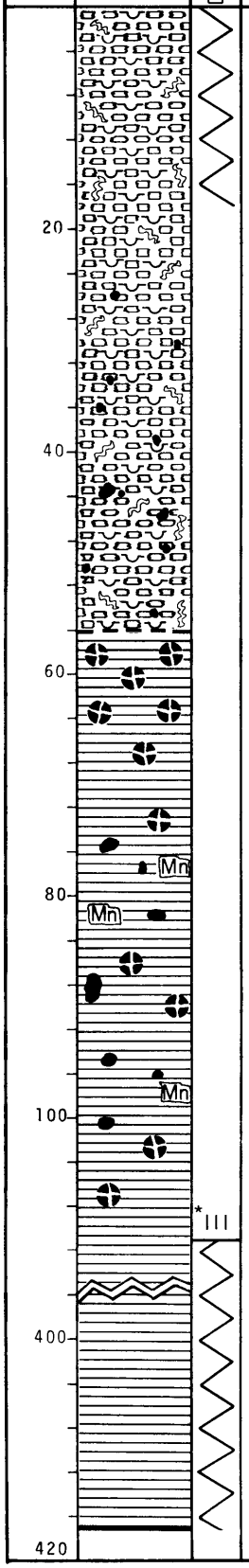
220-1137 cm: Pelagic clay, dark yellowish brown (10YR 4/2); moderately stained with manganese oxides; micro-manganese nodules abundant throughout; laminae composed of pelagic clay, grayish orange (10YR 7/4) between 363-365 cm, 437-438 cm, 458-461 cm, 517-523 cm and 674-675 cm; stringers rich in silt-size quartz and feldspar particles between 228-234 cm; sedimentary clasts between 272-277 cm (5 cm), 279-281 cm (2 cm), 283-286 cm (3 cm), 308-309 cm (1 cm) 352-354 cm (2 cm) and 404-405 cm (1 cm), composed of pelagic clay, grayish orange (10YR 7/4), bioturbated, soft; highly bioturbated throughout; slightly disturbed between 546-565 cm; abrupt change to flow-in at 677 cm.

smear slides:	223 cm	244 cm	280 cm	354 cm	490 cm	651 cm
Quartz and Feldspar	25	7	10	7	12	7
Clay	68	86	80	86	80	87
Volcanic glass	5	2	1	2	1	2
Micro-Mn nodules	2	2	2	2	2	2
Zeolite	<1	1	-	<1	-	<1
Carbonate unspecified	<1	2	4	2	3	2
Calcareous nannos	-	<1	3	1	2	<1
Diatoms	<1	<1	<1	<1	<1	<1

Bottom topography: very flat bottom with thick sediment accumulation.

Logged by: Eggers, Graves, Kaharoeddin, Ciesielski

ISLAS ORCADAS PC 1277-2



LATITUDE: 45°02.1′ S
LONGITUDE: 22°28.2′ E
CORR. DEPTH: 4806 M, 2628 FM
CORE LENGTH: 417 CM

LITHOLOGIC DESCRIPTION

0-56 cm: Diatomaceous, calcareous ooze, pale yellowish brown (10YR 6/2), gradationally changing to yellowish gray (5Y 7/2) between 20-30 cm; pebbles up to 5 mm common between 25-56 cm; pebbles between 33-35 cm (1.5 cm) and 43-47 cm (4 cm); highly bioturbated; highly disturbed (washed) between 0-18 cm; gradational contact.

smear slides:	12 cm	22 cm
Quartz and Feldspar	1	-
Clay	10	-
Volcanic glass	2	1
Carbonate unspecified	20	10
Foraminifera	5	8
Calcareous nannos	24	48
Diatoms	35	30
Radiolarians	3	3
Sponge spicules	<1	<1
Silicoflagellates	<1	<1

56-417 cm: Pelagic clay, grayish orange (10YR 7/4), abruptly changing to moderate yellowish brown (10YR 5/4) at 108 cm; portions of sediment between 56-108 cm are partially compacted; sedimentary clasts up to 1 cm common between 56-108 cm partially to highly compacted; layer between 56-65 cm composed predominantly of sedimentary clasts up to 3 cm, composed of clay, grayish orange (10YR 7/4), highly lithified; sedimentary clasts between 66-68 cm (2 cm) and 89-91 cm (2 cm), composed of clay, grayish orange (10YR 7/4), highly lithified; manganese nodules and pebbles coated with manganese oxides up to 1 cm abundant between 75-78 cm, 81-84 cm, and 94-101 cm; 3 cm pebble between 87-90 cm, coated with manganese oxides; highly disturbed (washed and thinned) between 111-417 cm.

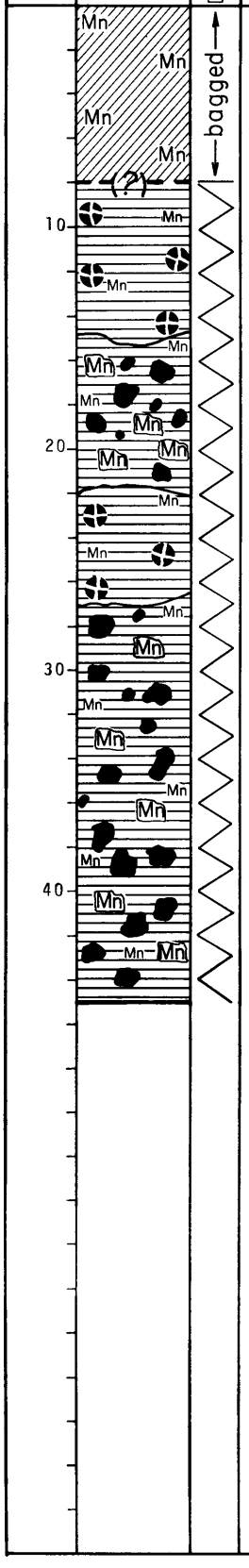
smear slides:	63 cm	104 cm	139 cm	413 cm
Quartz and Feldspar	4	2	2	5
Clay	84	95	60	73
Volcanic glass	3	3	4	3
Micro-Mn nodules	-	-	4	5
Zeolite	-	<1	5	4
Carbonate unspecified	3	<1	5	4
Foraminifera	-	-	1	-
Calcareous nannos	1	<1	3	1
Diatoms	5	-	15	4
Radiolarians	<1	-	1	1
Sponge spicules	<1	-	<1	<1
Silicoflagellates	<1	-	<1	-

Bottom topography: poorly defined; on the south flank of a sediment wedge in the basin of a fracture zone.

* NOTE: Sediment between 108-111 cm is bagged.

Logged by: Graves, Eggers, Hattner, Jones, Kaharoeddin

ISLAS ORCADAS PC 1277-3



LATITUDE: 46°59.7′ S
LONGITUDE: 21°55.5′ E
CORR. DEPTH: 5055 M, 2764 FM
CORE LENGTH: 45 CM

LITHOLOGIC DESCRIPTION

NOTE: This core apparently hit a manganese pavement, and obtained little sediment. After recovery, the empty portion of the liner was not cut off, resulting in the recovered sediment being severely washed. 0 cm was arbitrarily placed.

0-8 cm: Manganese pavement, brownish black (5YR 2/1); contains fragments of manganese pavement up to 4 cm; this unit is contained in a bag; length of unit was estimated by the volume of the bag sample.

8-45 cm: Mixture of various lithologies, as follows: between 8-15 and 22-27 cm, sediment consists of pelagic clay, grayish orange (10YR 7/4), with several fine-grain, highly lithified sedimentary clasts, moderate yellowish brown (10YR 5/4), scattered throughout. Between 15-22 cm and 27-45 cm, the lithology consists predominantly of manganese nodules and gravel (up to 4 cm), encrusted with manganese oxides, in a matrix of fine fractions consisting of pelagic clay, dusky yellowish brown (10YR 2/2). Micro-manganese nodules are abundant throughout unit (8-45 cm); entire core section is severely disturbed (washed). NOTE: Due to severe disturbance and mixing of this sediment during handling and transportation, the stratigraphic sequence is not viable.

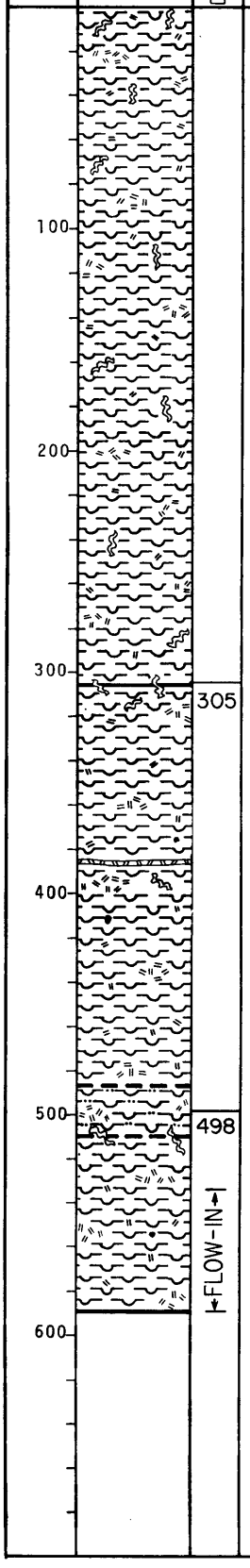
smear slides:	12 cm	26 cm	34 cm
Quartz and Feldspar	8	10	4
Heavy minerals	1	2	1
Clay	79	86	63
Volcanic glass	<1	<1	<1
Micro-Mn nodules	12	2	30
Diatoms	-	<<1	2
Sponge spicules	-	-	<<1
Silicoflagellates	-	<<1	-

NOTE: Smear slide at 34 cm is biased toward the fine fraction.

Bottom topography: fairly flat plain; near the south side of a rift.

Logged by: Eggers, Kaharoeddin

ISLAS ORCADAS PC 1277-4



LATITUDE: 47°59.3′ S CORR. DEPTH: 4559 M, 2493 FM

LONGITUDE: 21°34.9′ E CORE LENGTH: 590 CM

LITHOLOGIC DESCRIPTION

0-306 cm: Diatomaceous ooze, grayish olive (10Y 4/2), gradationally changing at 35 cm to yellowish gray (5Y 7/2); volcanic ash common throughout; slightly bioturbated between 0-14 cm and 35-306 cm; slightly washed along the side between 0-180 cm and 280-306 cm; sharp, bioturbated contact.

smear slides:	6 cm	44 cm	113 cm	217 cm
Quartz and Feldspar	5	2	2	3
Clay	5	2	3	2
Volcanic glass	<1	<1	1	1
Micro-Mn nodules	<1	<1	<1	-
Carbonate unspecified	3	3	2	1
Calcareous nannos	1	<1	-	<1
Diatoms	84	86	88	90
Radiolarians	2	6	3	2
Sponge spicules	<1	<1	<1	<1
Silicoflagellates	<1	1	1	1

306-487 cm: Diatomaceous ooze, grayish olive (10Y 4/2); higher clay content than overlying unit; volcanic ash common throughout; 1 cm volcanic ash lamina between 385-386 cm; 5 mm pebble between 374-375 cm; 2 cm pebble between 410-412 cm; slightly bioturbated between 306-317 cm and 388-395 cm; slightly washed along the side between 382-398 cm and 425-487 cm; gradational contact.

smear slides:	342 cm	386 cm	482 cm
Quartz and Feldspar	3	3	5
Clay	5	10	16
Volcanic glass	1	2	3
Micro-Mn nodules	<1	-	-
Carbonate unspecified	1	11	<1
Calcareous nannos	-	3	-
Diatoms	88	69	72
Radiolarians	2	2	3
Sponge spicules	-	-	<1
Silicoflagellates	<1	<1	1

487-510 cm: Muddy, diatomaceous ooze, olive gray (5Y 3/2); volcanic ash common throughout; slightly bioturbated between 487-493 cm; unit is slightly washed along the side; gradational, bioturbated contact.

smear slide:	502 cm
Quartz and Feldspar	11
Clay	25
Volcanic glass	8
Diatoms	53
Radiolarians	3
Sponge spicules	<1
Silicoflagellates	<1

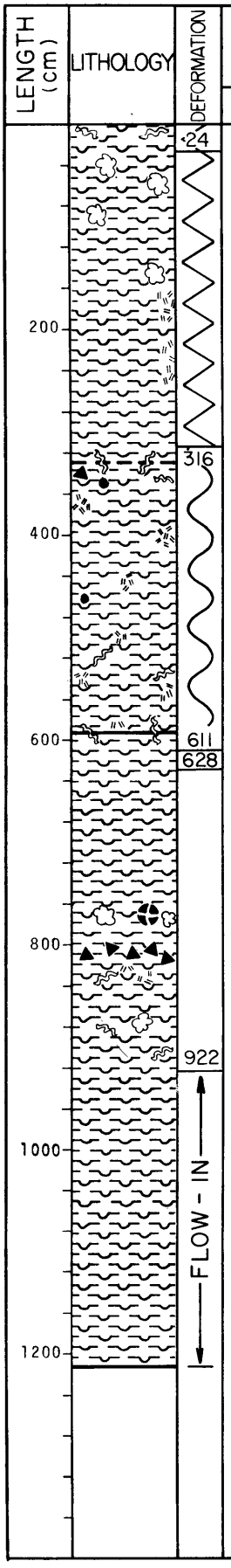
510-590 cm: Diatomaceous ooze, dusky yellow (5Y 6/4); volcanic ash common throughout; 1 cm pebble between 552-553 cm; slightly bioturbated between 510-513 cm; slightly washed along the side between 510-555 cm; gradational change to flow-in at 534 cm.

smear slide:	531 cm
Quartz and Feldspar	6
Clay	5
Volcanic glass	2
Diatoms	80
Radiolarians	6
Silicoflagellates	1

Bottom topography: somewhat flat.

Logged by: Graves, Jones, Kaharoeddin, Hattner

ISLAS ORCADAS PC 1277-5



LATITUDE: 49°01.0′ S
LONGITUDE: 21°21.2′ E
CORR. DEPTH: 4610 M, 2521 FM
CORE LENGTH: 1212 CM

LITHOLOGIC DESCRIPTION

0-328 cm: Diatomaceous ooze, yellowish gray (5Y 7/2); mottled between 15-160 cm; high concentrations of volcanic ash along the side between 160-193 cm and 214-254 cm, caused by washing; highly bioturbated between 0-15 cm; unit is highly disturbed (washed); gradational, bioturbated contact.

smear slide:	33 cm
Quartz and Feldspar	2
Clay	5
Volcanic glass	1
Micro-Mn nodules	<1
Carbonate unspecified	1
Diatoms	83
Radiolarians	6
Silicoflagellates	2

328-593 cm: Diatomaceous ooze, light olive gray (5Y 5/2); unit has higher clay content than overlying unit; volcanic ash common throughout; zones of increased volcanic ash content between 426-429 cm, 440-460 cm and 520-528 cm; 2 cm angular scoria and 3 cm angular, flat gneissic pebble between 342-345 cm; 1 cm pebble between 459-460 cm; slightly bioturbated between 328-339 cm and 520-540 cm; unit is slightly disturbed (washed); sharp, bioturbated contact.

smear slides:	352 cm	428 cm	567 cm
Quartz and Feldspar	5	5	10
Clay	10	15	5
Volcanic glass	7	7	8
Micro-Mn nodules	-	<1	<1
Carbonate unspecified	2	6	-
Diatoms	75	65	69
Radiolarians	1	2	8
Sponge spicules	<1	-	<1
Silicoflagellates	<1	<1	<1

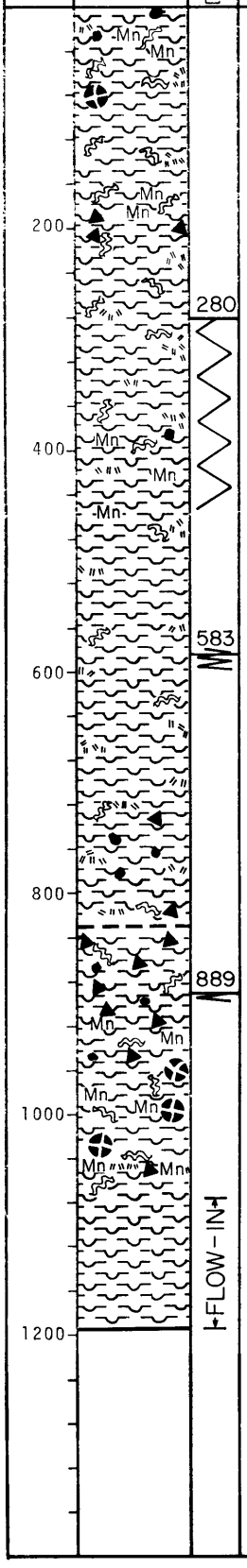
593-1212 cm: Diatomaceous ooze, yellowish gray (5Y 7/2), becoming light olive gray (5Y 5/2) between 800-830 cm; mottled between 760-780 cm and 875-880 cm; zone of increased volcanic ash between 800-830 cm; stringers between 760-864 cm rich in radiolarians; 1 cm sedimentary clast between 766-767 cm, rich in radiolarians; 1 cm pumice between 803-804 cm and 810-811 cm; 5 mm scoria between 811-812 cm, 825-826 cm, 828-829 cm; slightly bioturbated between 823-915 cm; gradational change to flow-in at 922 cm.

smear slides:	633 cm	780 cm	810 cm	889 cm	928 cm
Quartz and Feldspar	5	4	6	2	6
Clay	3	2	5	2	1
Volcanic glass	2	2	10	2	4
Micro-Mn nodules	<1	<1	-	<1	<<1
Carbonate unspecified	-	-	1	1	1
Diatoms	85	71	68	85	78
Radiolarians	3	20	10	8	10
Sponge spicules	<1	<1	<1	-	<1
Silicoflagellates	2	1	<1	<1	<1

Bottom topography: fairly level plateau, with thick sediment accumulation.

Logged by: Eggers, Graves, Jones, Kaharoeddin, Ciesielski

ISLAS ORCADAS PC 1277-6



LATITUDE: 49°29.9′ S
LONGITUDE: 21°10.6′ E
CORR. DEPTH: 4243 M, 2320 FM
CORE LENGTH: 1194 CM

LITHOLOGIC DESCRIPTION

0-830 cm: Diatomaceous ooze, predominantly grayish orange (10YR 7/4), alternating with pale yellowish brown (10YR 6/2) changing to dark yellowish brown (10YR 4/2) between 475-524 cm and 761-802 cm; volcanic ash up to 4 mm abundant throughout; zone of increased sand and volcanic ash content between 475-524 cm; concentration of volcanic ash along the side between 49-56 cm and 75-79 cm, caused by washing; highly stained with manganese oxides between 30-36 cm, 174-192 cm, 396-434 cm, 448-553 cm; 8 cm sedimentary clast between 91-99 cm, yellowish gray (5Y 7/2), contains abundant micro-manganese nodules, soft; conglomerates coated with manganese oxides between 18-21 cm (3 cm), 381-382 cm (1 cm), 776-779 cm (3 cm), 786-789 cm (3 cm); pebble coated with manganese oxides between 1-3 cm (1.5 cm), and 786-789 cm (3 cm); several 5 mm to 1 cm pumice scattered between 196-199 cm; 1 cm scoria between 734-744 cm; welded tuff between 211-213 cm (1.5 cm) and 825-826 cm (5 mm); highly bioturbated between 0-280 cm; moderately bioturbated between 387-430 cm, and 560-830 cm; slightly bioturbated between 280-387 cm, 430-475 cm, 524-560 cm; highly disturbed (washed) between 280-453 cm and 579-601 cm; gradational contact.

smear slides:	25 cm	212 cm	346 cm	444 cm	490 cm	610 cm
Quartz and Feldspar	6	3	3	15	12	7
Heavy minerals	<1	1	<1	2	<1	-
Clay	1	5	1	7	10	7
Volcanic glass	4	2	3	5	15	5
Micro-Mn nodules	-	-	-	<1	-	-
Diatoms	87	89	90	70	61	79
Radiolarians	2	<1	2	1	2	2
Sponge spicules	<1	-	-	<1	<1	-
Silicoflagellates	<1	<1	1	<1	<1	<1

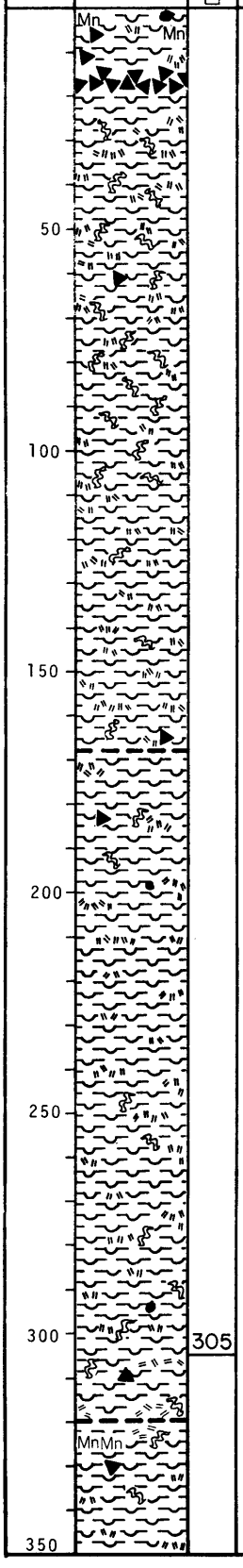
830-1194 cm: Diatomaceous ooze, very pale orange (10YR 8/2) alternating with diatomaceous ooze, pale yellowish brown (10YR 6/2) of higher clay and volcanic ash content; contacts are sharp, inclined, and bioturbated; 3 cm layer rich in volcanic ash between 1051-1054 cm; highly stained with manganese oxides between 919-926 cm, 980-997 cm and 1046-1049 cm; sedimentary clasts between 964-968 cm (4 cm) and 1007-1014 cm (7 cm), pale yellowish brown (10YR 6/2), soft; 5 cm sedimentary clast between 1022-1027 cm, very pale orange (10YR 8/2), soft, bioturbated; 2 cm conglomerate between 950-952 cm, partially coated with manganese oxides; 1.5 cm conglomerate between 904-906 cm coated with manganese oxides; 6 mm pebble between 870-871 cm; scoria between 835-836 cm (1 cm), 868-870 cm (1.5 cm) and 1050-1053 cm (3 cm); 1 cm welded tuff between 886-887 cm; 1.5 cm welded tuff between 948-950 cm; abundance of welded tuff up to 1 cm between 831-834 cm and 904-905 cm; highly bioturbated between 830-1078 cm; highly disturbed between 890-894 cm; abrupt change to flow-in at 1078 cm.

smear slides:	846 cm	966 cm
Quartz and Feldspar	8	4
Heavy minerals	1	<1
Clay	8	<1
Volcanic glass	5	1
Diatoms	76	86
Radiolarians	2	5
Sponge spicules	<1	1
Silicoflagellates	<1	3

Bottom topography: irregular bottom, with little sediment accumulation.

Logged by: Eggers, Graves, Kaharoeddin, Goldstein

ISLAS ORCADAS PC 1277-7



LATITUDE: 49°59.4′ S CORR. DEPTH: 4153 M, 2271 FM

LONGITUDE: 21°06.9′ E CORE LENGTH: 1137 CM

LITHOLOGIC DESCRIPTION

0-168 cm: Diatomaceous ooze; pale yellowish brown (10YR 6/2); volcanic ash up to 4 mm abundant throughout; coarse volcanic ash (2-4 mm) mainly scattered between 104-168 cm; highly stained with manganese oxides between 0-1 cm and 5-6 cm; slightly stained with manganese oxides between 44-45 cm, 47-49 cm, 60-65 cm, 102-110 cm, and 113-168 cm; layer of volcaniclastics between 14-19 cm, includes basaltic scoriae, pumice, welded tuff, ranging in size from 5 mm to 2 cm; 1 cm basaltic pebble between 1-2 cm; 2 cm rounded, broken pumice between 6-8 cm; 3 cm augular welded tuff between 12-15 cm; 1 cm scoria between 61-62 cm; 5 mm scoria between 166-167 cm; highly bioturbated between 25-110 cm; slightly bioturbated between 110-168 cm; slightly washed along the side between 0-20 and 128-168 cm; gradational contact.

smear slides:	10 cm	68 cm	118 cm
Quartz and Feldspar	5	15	12
Heavy minerals	-	1	1
Clay	8	5	4
Volcanic glass	6	15	17
Diatoms	79	59	61
Radiolarians	2	5	5
Sponge spicules	<1	<1	<1
Silicoflagellates	<1	<<1	<<1

168-320 cm: Diatomaceous ooze, grayish orange (10YR 7/4); volcanic ash up to 2 mm common throughout; increasing volcanic ash content between 277-299 cm; slightly stained with manganese oxides between 189-205 cm; scoriae between 184-185 cm (4 mm), and 312-313 cm (3 mm and 5 mm); basaltic pebble between 199-200 cm (4 mm) and 294-295 cm (5 mm); moderately bioturbated between 180-195 cm; slightly bioturbated between 247-260 cm and 276-320 cm; slightly washed along the side between 168-305 cm; gradational contact.

smear slides:	242 cm	295 cm
Quartz and Feldspar	2	6
Heavy minerals	<1	<1
Clay	<1	1
Volcanic glass	5	15
Diatoms	85	70
Radiolarians	7	7
Sponge spicules	<1	-
Silicoflagellates	1	1

320-378 cm: Diatomaceous ooze, pale yellowish brown (10YR 6/2); volcanic ash up to 2 mm abundant throughout; highly stained with manganese oxides between 323-327 cm; slightly stained with manganese oxides between 358-378 cm; 5 mm scoria between 329-330 cm; slightly bioturbated between 322-336 cm and 362-378 cm; gradational contact.

smear slide:	350 cm
Quartz and Feldspar	7
Heavy minerals	<1
Clay	1
Volcanic glass	10
Diatoms	79
Radiolarians	2
Sponge spicules	<1
Silicoflagellates	1

378-423 cm: Radiolarian-bearing, volcanic ash, olive gray (5Y 4/1), gradationally changing at 400 cm to olive black (5Y 2/1); zone of increased diatom content between 378-386 cm; volcanic ash content increasing with depth; fine laminations of radiolarian ooze alternating with volcanic ash between 417-423 cm; sharp, irregular contact.

smear slide:	403 cm
Quartz and Feldspar	27
Clay	1
Volcanic glass	45
Diatoms	6
Radiolarians	20
Sponge spicules	1
Silicoflagellates	<1

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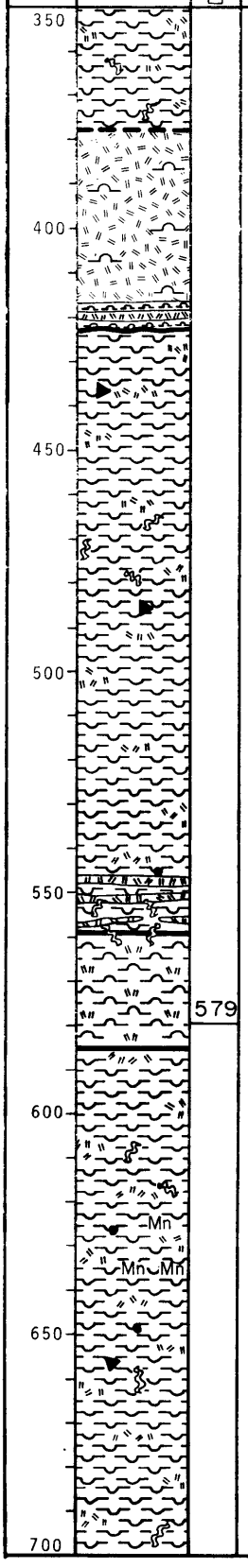
Logged by: Kaharoeddin, Graves, Smolko, Goldstein, Eggers

ISLAS ORCADAS PC 1277-7



LATITUDE: 49°59.4′ S
LONGITUDE: 21°06.9′ E
CORR. DEPTH: 4153 M, 2271 FM
CORE LENGTH: 1187 CM

LITHOLOGIC DESCRIPTION

CONTINUED

423-559 cm: Diatomaceous ooze, pale yellowish brown (10YR 6/2); volcanic ash up to 4 mm abundant throughout; laminae rich in volcanic ash between 548-549 cm and 550-551 cm; irregular laminae rich in volcanic ash between 556-559 cm; welded tuff between 437-438 cm (6 mm) and 486-487 cm (7 mm); 7 mm weathered volcanic pebble between 547-548 cm; highly bioturbated between 550-559 cm; moderately bioturbated between 462-485 cm; slightly washed along the side between 557-559 cm; sharp, bioturbated contact.

smear slides:	433 cm	503 cm
Quartz and Feldspar	15	8
Heavy minerals	2	<1
Clay	4	2
Volcanic glass	12	5
Diatoms	63	80
Radiolarians	4	4
Sponge spicules	<1	<1
Silicoflagellates	<1	1

559-585 cm: Ash-bearing, radiolarian ooze, olive black (5Y 2/1); stringers of radiolarian ooze between 563-566 cm; moderately washed along the side between 559-579 cm; sharp contact.

smear slide:	574 cm
Quartz and Feldspar	10
Heavy minerals	2
Clay	2
Volcanic glass	31
Diatoms	15
Radiolarians	40
Sponge spicules	<1
Silicoflagellates	<1

585-914 cm: Diatomaceous ooze, grayish orange (10YR 7/4) alternating with pale yellowish brown (10YR 6/2); volcanic ash up to 3 mm abundant throughout; moderately stained with manganese oxides between 625-628 cm and 634-635 cm; slightly stained with manganese oxides between 795-800 cm; zone of increased mud content between 710-732 cm; zone of very abundant volcanic ash between 667-682 cm; basaltic pebbles between 625-626 cm (5 mm) and 648-650 cm (1.5 cm); scoriae between 657-658 cm (1 cm), and 728-729 cm (1 cm); welded tuff between 806-807 cm (1 cm) and 855-856 cm (6 mm); moderately bioturbated between 759-801 cm, 820-884 cm and 900-914 cm; slightly bioturbated between 616-639 cm, 664-680 cm and 696-759 cm; sharp, bioturbated contact.

smear slides:	654 cm	718 cm	785 cm	810 cm	893 cm
Quartz and Feldspar	4	10	6	10	2
Heavy minerals	1	1	<1	<1	<1
Clay	<1	24	2	3	<1
Volcanic glass	5	5	4	10	2
Diatoms	86	55	83	72	75
Radiolarians	4	4	4	5	10
Sponge spicules	<1	<1	-	-	-
Silicoflagellates	<1	1	1	<1	1

914-1142 cm: Diatomaceous ooze, pale yellowish brown (10YR 6/2); volcanic ash up to 2 mm abundant throughout; highly stained with manganese oxides between 933-939 cm, 943-947 cm, and 1064-1068 cm; slightly to moderately stained with manganese oxides between 914-920 cm, 924-933 cm, 957-969 cm, 979-992 cm, 1015-1029 cm, 1080-1089 cm and 1094-1099 cm; zone of increased mud content between 1064-1085 cm; basaltic pebbles between 995-997 cm (2 cm), 997-999 cm (2 cm) and 1125-1126 cm (5 mm); slightly bioturbated between 1124-1130 cm; sharp, inclined contact.

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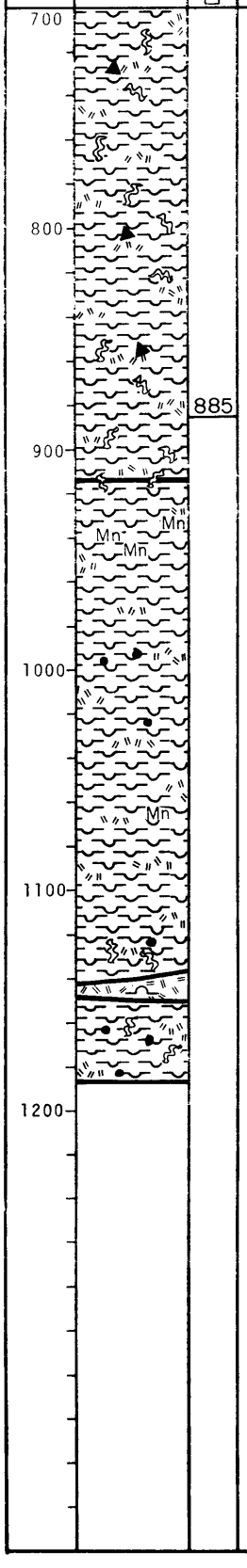
Logged by: Kaharoeddin, Graves, Smolko, Goldstein, Eggers

(SC)

ISLAS ORCADAS PC 1277-7



LATITUDE: 49°59.4′ S
LONGITUDE: 21°06.9′ E
CORR. DEPTH: 4153 M, 2271 FM
CORE LENGTH: 1187 CM

LITHOLOGIC DESCRIPTION

CONTINUED

smear slides:	971 cm	1036 cm	1077 cm
Quartz and Feldspar	7	5	15
Heavy minerals	-	-	1
Clay	1	<1	20
Volcanic glass	10	4	12
Diatoms	75	83	49
Radiolarians	7	8	3
Sponge spicules	<1	<1	<1
Silicoflagellates	<1	<1	<1

1142-1149 cm: Radiolarian-bearing, volcanic ash, olive black (5Y 2/1); finely laminated volcanic ash between 1145-1147 cm; sharp, inclined contact.

smear slide:	1145 cm
Quartz and Feldspar	21
Heavy minerals	2
Clay	4
Volcanic glass	45
Diatoms	8
Radiolarians	20

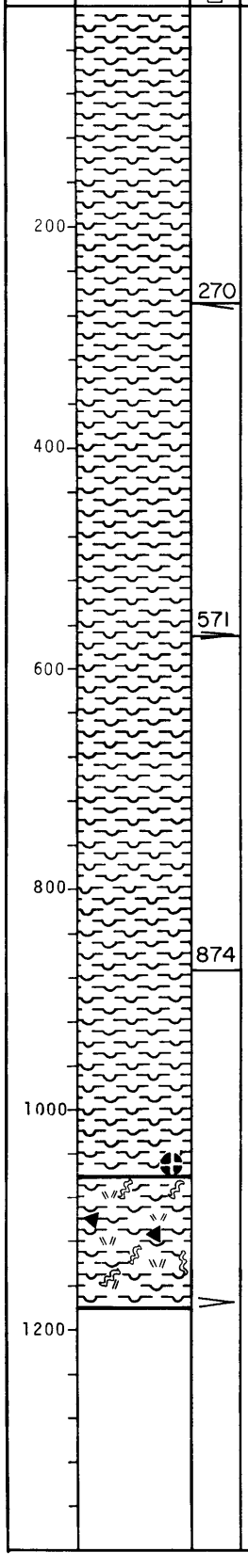
1149-1187 cm: Diatomaceous ooze, pale yellowish brown (10YR 6/2), gradationally changing to very pale orange (10YR 8/2) at 1170 cm; volcanic ash up to 2 mm abundant between 1149-1170 cm, and moderate between 1170-1187 cm; pebbles between 1162-1164 cm (2 cm), 1166-1167 cm (1 cm) and 1184-1185 cm (5 mm); slightly bioturbated between 1155-1175 cm; slightly washed along the side between 1177-1187 cm.

smear slides:	1155 cm	1183 cm
Quartz and Feldspar	7	1
Heavy minerals	1	-
Clay	1	<1
Volcanic glass	15	1
Diatoms	70	94
Radiolarians	5	2
Sponge spicules	<1	-
Silicoflagellates	1	2

Bottom topography: irregular bottom, with thick sediment accumulation.

Logged by: Kaharoeddin, Graves, Smolko, Goldstein, Eggers

ISLAS ORCADAS PC 1277-8



LATITUDE: 50°32.5′ S
LONGITUDE: 20°53.0′ E
CORR. DEPTH: 4492 M, 2456 FM
CORE LENGTH: 1173 CM

LITHOLOGIC DESCRIPTION

0-1060 cm: Diatomaceous ooze, light olive gray (5Y 5/2) gradationally changing at 1002 cm to yellowish gray (5Y 7/2); volcanic ash scattered sparsely between 1040-1060 cm; 2 cm soft sedimentary clast, between 1047-1049 cm, olive black (5Y 2/1), composed of volcanic ash up to 4 mm; moderately disturbed between 270-276 cm and 567-572 cm; sharp contact.

smear slides:	75 cm	371 cm	1054 cm
Quartz and Feldspar	3	1	2
Heavy minerals	<<1	-	-
Clay	2	1	1
Volcanic glass	3	1	2
Micro-Mn nodules	<1	<<1	-
Carbonate unspecified	3	2	<<1
Foraminifera	-	<1	-
Diatoms	85	93	89
Radiolarians	3	2	4
Sponge spicules	-	<<1	-
Silicoflagellates	1	<1	2

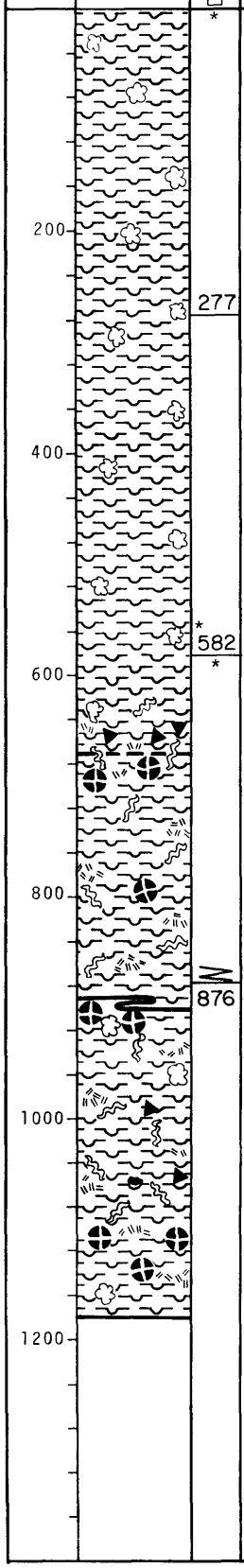
1060-1178 cm: Ash-bearing, diatomaceous ooze, light olive gray (5Y 6/1); volcanic ash up to 4 mm abundant throughout; several pyritized worm casts up to 6 mm between 1066-1069 cm; 1 cm scoria between 1115-1116 cm; 7 mm pumice between 1105-1106 cm; moderately bioturbated between 1060-1065 and 1120-1134 cm; slightly bioturbated between 1140-1147 cm; highly disturbed between 1169-1178 cm.

smear slides:	1098 cm	1138 cm
Quartz and Feldspar	8	8
Heavy minerals	2	1
Clay	2	2
Volcanic glass	18	15
Micro-Mn nodules	<<1	<<1
Diatoms	65	70
Radiolarians	5	4
Sponge spicules	<1	<1
Silicoflagellates	<1	<1

Bottom topography: not recorded.

Logged by: Ciesielski, Eggers, Kaharoeddin, Graves

ISLAS ORCADAS PC 1277-9



LATITUDE: 51°00.8' S
LONGITUDE: 20°44.3' E
CORR. DEPTH: 4151 M, 2270 FM.
CORE LENGTH: 1181 CM

LITHOLOGIC DESCRIPTION

0-669 cm: Diatomaceous ooze, pale olive (10Y 6/2), gradationally changing at 638 cm to yellowish gray (5Y 7/2); unit is mottled; 1 cm lamina convexing sharply upward between 462-467 cm, composed of diatomaceous ooze, yellowish gray (5Y 7/2); volcanic ash common between 646-669 cm; pumice and scoria up to 2 cm abundant between 646-652 cm; moderately bioturbated between 619-669 cm; slightly washed along the side between 125-314 cm; gradational, bioturbated contact.

smear slides:	75 cm	431 cm	658 cm
Quartz and Feldspar	1	<1	2
Heavy minerals	<<1	-	<<1
Clay	1	<1	<1
Volcanic glass	1	-	1
Micro-Mn nodules	<<1	<1	3
Carbonate unspecified	<1	<1	<<1
Foraminifera	<1	<1	-
Diatoms	93	97	89
Radiolarians	1	1	2
Silicoflagellates	3	2	3

669-899 cm: Diatomaceous ooze, moderate olive brown (5Y 4/4); unit has higher clay content than overlying and underlying units; volcanic ash up to 4 mm common throughout; 2 cm sedimentary clast between 677-679 cm, composed of diatomaceous ooze, yellowish gray (5Y 7/2), soft; 1 cm sedimentary clasts between 686-687 cm and 795-796 cm, composed of diatomaceous ooze, soft; unit is slightly bioturbated; highly disturbed (washed) between 864-876 cm; sharp, sinuous contact.

smear slides:	752 cm	861 cm
Quartz and Feldspar	5	7
Heavy minerals	<1	<1
Clay	3	12
Volcanic glass	7	8
Diatoms	82	70
Radiolarians	3	3
Sponge spicules	<<1	<1
Silicoflagellates	<1	<1

899-1181 cm: Diatomaceous ooze, grayish orange (10YR 7/4), gradationally changing to moderate olive brown (5Y 4/4) between 999-1018 cm and 1084-1101 cm; mottled between 899-970 cm and 1148-1181 cm; volcanic ash common between 988-1018 cm and 1055-1117 cm; volcanic ash sparsely scattered between 1018-1055 cm; several sedimentary clasts up to 2 cm between 1103-1115 cm, sedimentary clasts between 902-904 (2 cm and 1.5 cm) and between 1133-1134 cm (1 cm), composed of diatomaceous ooze, moderate olive brown (5Y 4/4), contain volcanic ash, soft; 6 mm scoria between 988-989 cm; 1.5 cm scoria between 1045-1047 cm; 8 mm pebble between 1049-1050 cm; moderately bioturbated between 992-1020 cm and 1052-1100 cm; slightly bioturbated between 936-938 cm; moderately washed along the side between 1160-1181 cm; slightly washed along the side between 1055-1160 cm.

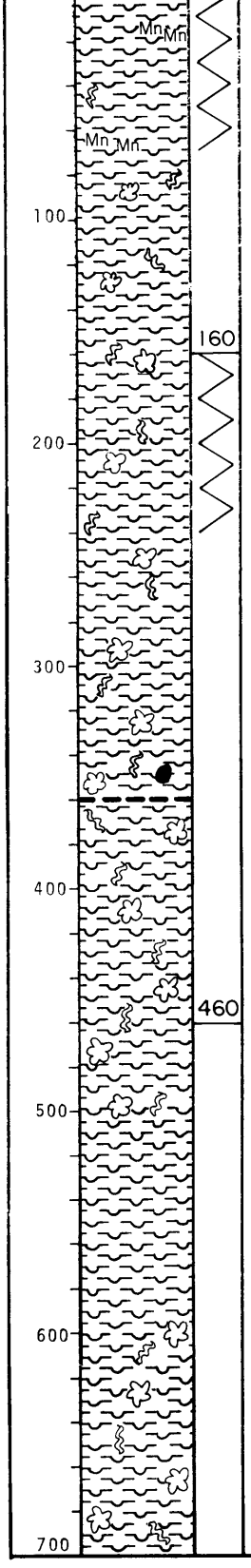
smear slides:	956 cm	1012 cm	1094 cm	1179 cm
Quartz and Feldspar	1	8	5	1
Heavy minerals	<<1	<1	1	<<1
Clay	<1	1	<1	<1
Volcanic glass	1	10	12	<<1
Diatoms	95	78	81	94
Radiolarians	2	2	1	1
Sponge spicules	-	<<1	-	-
Silicoflagellates	1	1	<1	4

Bottom topography: thick sediment wedge filling a low between two bathymetric highs.

* NOTE: Sediment between 0-1 cm, 581-582 cm, and 582-584 cm is bagged.

Logged by: Eggers, Kaharoeddin, Graves, Goldstein, Jones

ISLAS ORCADAS PC 1277-10



LATITUDE: 52°01.1′ S CORR. DEPTH: 2740 M, 1498 FM

LONGITUDE: 20°28.3′ E CORE LENGTH: 1680 CM

LITHOLOGIC DESCRIPTION

0-360 cm: Diatomaceous ooze, grayish orange (10YR 7/4), gradationally changing at 67 cm to dusky yellow (5Y 6/4); abruptly changing at 83 cm to yellowish gray (5Y 7/2); mottled with moderate olive brown (5Y 4/4) between 83-360 cm; volcanic ash up to 1 mm sparsely scattered between 0-160 cm and 228-230 cm; highly stained with manganese oxides in irregular patches between 13-20 cm and 64-69 cm; slightly stained with manganese oxides in small patches between 83-93 cm; zone of increased carbonate content between 67-83 cm; rounded 6 cm basaltic pebble between 347-353 cm; slightly bioturbated throughout; highly disturbed (washed) between 0-68 cm and 160-240 cm; slightly washed along the side between 68-160 cm and 240-360 cm; gradational contact.

smear slides:	42 cm	75 cm	209 cm	352 cm
Quartz and Feldspar	1	<1	1	2
Clay	<1	1	2	1
Volcanic glass	<1	<1	1	1
Carbonate unspecified	2	5	4	4
Foraminifera	-	3	-	-
Calcareous nannos	-	1	-	-
Diatoms	94	88	91	90
Radiolarians	1	1	<1	<1
Sponge spicules	<1	-	-	-
Silicoflagellates	2	1	1	2

360-765 cm: Diatomaceous ooze, very pale orange (10YR 8/2), mottled with dusky yellow (5Y 6/4) between 360-505 cm and 597-736 cm, gradationally changing at 376 cm to dusky yellow (5Y 6/4); micromanganese nodules and volcanic ash up to 1 mm sparsely scattered between 360-510 and 590-765 cm; zone of decreased carbonate content between 735-765 cm; slightly bioturbated between 360-505 cm and 600-736 cm; moderately washed along the side between 410-460 cm and 600-765 cm; slightly washed along the side between 360-410 cm and between 535-600 cm; sharp contact (on the end of core section).

smear slides:	368 cm	519 cm	752 cm
Quartz and Feldspar	2	1	2
Clay	1	1	2
Volcanic glass	1	1	1
Micro-Mn nodules	-	-	1
Carbonate unspecified	9	5	-
Foraminifera	3	5	<1
Calcareous nannos	<1	-	-
Diatoms	81	82	91
Radiolarians	1	2	2
Sponge spicules	-	-	-
Silicoflagellates	2	3	1

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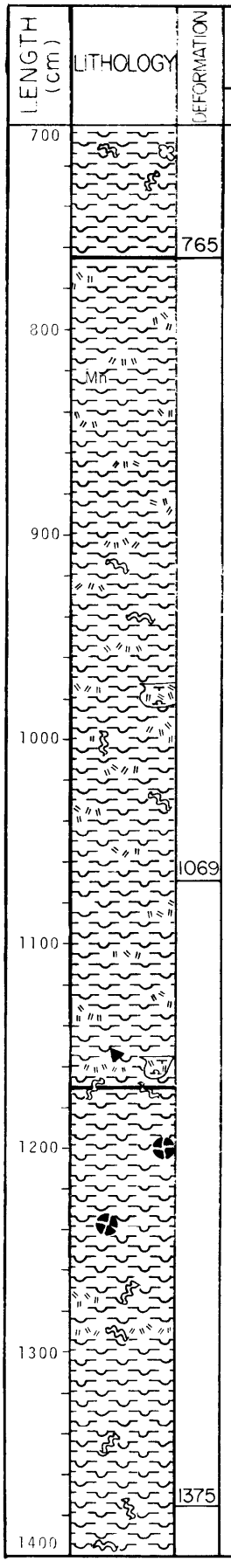
Logged by: Kaharoeddin, Graves, Goldstein, Eggers

ISLAS ORCADAS PC 1277-10



LATITUDE: 52°01.1' S
LONGITUDE: 20°28.3' E
CORR. DEPTH: 2740 M, 1498 FM
CORE LENGTH: 1680 CM

LITHOLOGIC DESCRIPTION

CONTINUED

765-1170 cm: Diatomaceous ooze, light olive gray (5Y 5/2); volcanic ash up to 2 mm abundant throughout; increasing volcanic ash content between 890-926 cm, 998-1060 cm, 1090-1125 cm and 1147-1170 cm; highly stained with manganese oxides in a small patch between 823-824 cm; slightly stained with manganese oxides in small patches between 862-863 cm, 963-964 cm and 1016-1018 cm; irregular casts on the side of the core between 971-980 cm and 1157-1163 cm, filled with volcanic ash, foraminifera and radiolarians; 2 cm basaltic scoria between 1154-1156 cm; slightly bioturbated between 905-960 cm and 993-1060 cm; moderately washed along the side between 1056-1060 cm; slightly washed along the side between 1028-1056 cm; sharp, bioturbated contact.

smear slides:	856 cm	1007 cm	1117 cm	(Sed. Cast) 1163 cm
Quartz and Feldspar	4	10	4	15
Clay	15	5	5	4
Volcanic glass	3	10	5	23
Micro-Mn nodules	<1	-	-	-
Carbonate unspecified	2	-	<1	12
Foraminifera	3	-	<1	25
Calcareous nannos	<1	-	-	-
Diatoms	72	72	83	20
Radiolarians	1	3	3	1
Sponge spicules	<1	-	-	<1
Silicoflagellates	<1	<1	<1	<1

1170-1516 cm: Diatomaceous ooze, grayish orange (10YR 7/4) alternating with yellowish gray (5Y 7/2); volcanic ash up to 2 mm abundant between 1268-1294 cm; volcanic ash up to 1 mm sparsely scattered between 1170-1268 cm and 1294-1516 cm; volcanic ash concentration in small patches along the side between 1336-1373, due to washing; slightly stained with manganese oxides in small patches between 1267-1275 cm, 1382-1416 cm, 1452-1454 cm and 1503-1504 cm; sedimentary clasts between 1194-1202 cm and 1233-1241 cm, composed primarily of volcanic ash, radiolarians, foraminifera and diatoms, soft; slightly bioturbated between 1170-1180 cm, 1268-1293 cm and 1339-1516 cm; slightly washed along the side between 1287-1434 cm; gradational contact.

smear slides:	1214 cm	1286 cm	1396 cm
Quartz and Feldspar	1	5	2
Clay	<1	3	<1
Volcanic glass	<1	2	<1
Micro-Mn nodules	-	-	<1
Carbonate unspecified	5	<1	<1
Foraminifera	3	-	-
Diatoms	90	90	97
Radiolarians	1	<1	<1
Sponge spicules	-	-	<1
Silicoflagellates	<1	<1	1

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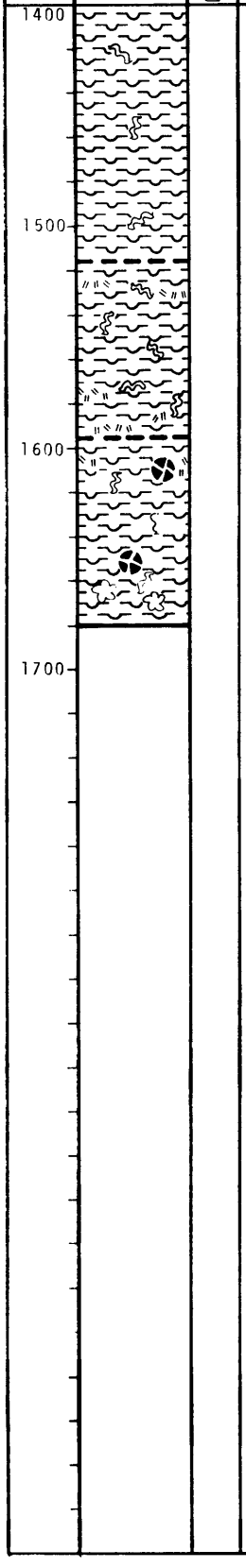
Logged by: Kaharoeddin, Graves, Goldstein, Eggers

ISLAS ORCADAS PC 1277-10



LATITUDE: 52°01.1' S
LONGITUDE: 20°23.3' E
CORR. DEPTH: 2740 M, 1498 FM
CORE LENGTH: 1680 CM

LITHOLOGIC DESCRIPTION

CONTINUED

1516-1596 cm: Diatomaceous ooze, yellowish gray (5Y 7/2) alternating with light olive gray (5Y 5/2); volcanic ash up to 2 mm abundant between 1516-1539 cm and 1572-1596 cm; volcanic ash sparsely scattered between 1539-1572 cm; moderately bioturbated between 1518-1544 cm and 1565-1572 cm; slightly bioturbated between 1572-1595 cm; gradational contact.

smear slides:	1554 cm	1586 cm
Quartz and Feldspar	2	4
Clay	3	2
Volcanic glass	2	6
Micro-Mn nodules	<1	-
Carbonate unspecified	5	2
Foraminifera	1	-
Diatoms	85	85
Radiolarians	1	1
Sponge spicules	-	<1
Silicoflagellates	1	<1

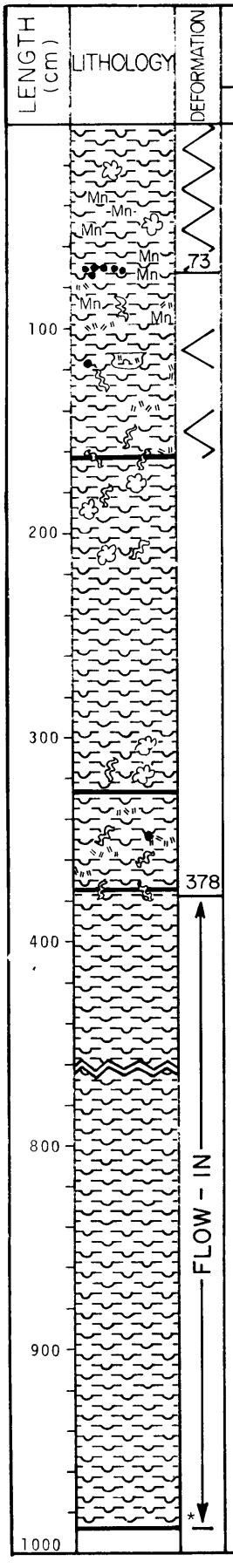
1596-1680 cm: Diatomaceous ooze, yellowish gray (5Y 7/2) changing to grayish orange (10YR 7/4) at 1620 cm; mottled with dusky yellow (5Y 6/4) between 1666-1674 cm; volcanic ash up to 1 mm common between 1596-1618 cm; volcanic ash up to 1 mm sparsely scattered between 1618-1680 cm; sedimentary clast between 1605-1608 cm and 1651-1652 cm, composed predominantly of diatomaceous ooze and volcanic ash, light olive gray (5Y 5/2), soft; slightly bioturbated throughout; slightly washed along the side between 1637-1680 cm.

smear slide:	1644 cm
Quartz and Feldspar	2
Clay	4
Volcanic glass	<1
Carbonate unspecified	<1
Diatoms	93
Radiolarians	1
Sponge spicules	<1
Silicoflagellates	<1

Bottom topography: **not recorded.**

Logged by: Kaharoeddin, Graves, Goldstein, Eggers

ISLAS ORCADAS PC 1277-11



LATITUDE: 53°0.0′ S
LONGITUDE: 20°05.6′ E
CORR. DEPTH: 3027 M, 1655 FM
CORE LENGTH: 988 CM

LITHOLOGIC DESCRIPTION

NOTE: This core imploded at several places; the empty part of the topmost section of the core liner was not cut off aboard ship, resulting in the top part of the core being washed, leaving no trace of the position of the water/sediment interface; position of zero cm was estimated.

0-163 cm: Diatomaceous ooze, dark yellowish brown (10YR 4/2), gradationally changing at 98 cm to light olive gray (5Y 5/2); slightly mottled between 0-60 cm; volcanic ash up to 4 mm abundant between 72-163 cm; volcanic ash sparsely scattered between 0-72 cm; highly stained with manganese oxides between 37-46 cm, 50-61 cm, 72-84 cm and 86-92 cm; slightly stained with manganese oxides between 92-98 cm, 122-130 cm and 156-160 cm; sedimentary cast between 117-119 cm filled with volcanic ash and radiolarians; cluster of 5 to 6 mm pebbles between 67-70 cm; 4 cm pebble between 116-120 cm; slightly bioturbated between 80-163 cm; highly disturbed (washed) between 0-20 cm, with a piece of broken liner imbedded in the sediment; moderately disturbed due to pieces of broken liner embedded in the sediment between 20-73 cm, 100-120 cm and 140-163 cm; sharp, bioturbated contact.

smear slides:	29 cm	49 cm	88 cm	130 cm
Quartz and Feldspar	6	12	15	8
Heavy minerals	<1	<1	-	-
Clay	1	15	10	5
Volcanic glass	5	12	10	10
Carbonate unspecified	<<1	-	-	-
Foraminifera	<1	-	-	-
Diatoms	84	60	62	72
Radiolarians	2	1	3	5
Sponge spicules	1	<1	-	-
Silicoflagellates	1	<1	<1	<1

163-327 cm: Diatomaceous ooze, very pale orange (10YR 8/2); highly mottled with yellowish gray (5Y 7/2) between 163-191 cm, 203-216 cm and 300-327 cm; slightly bioturbated between 163-216 cm and 304-327 cm; sharp contact.

smear slide:	231 cm
Quartz and Feldspar	<1
Clay	<1
Carbonate unspecified	1
Diatoms	96
Radiolarians	2
Silicoflagellates	1

327-374 cm: Diatomaceous ooze, light olive gray (5Y 5/2); volcanic ash up to 4 mm abundant throughout; increasing volcanic ash content between 346-349 cm and 354-356 cm; 1 cm weathered, angular pebble between 348-349 cm; slightly bioturbated throughout; sharp, bioturbated content. NOTE: Smear slide was taken at interval with high volcanic ash.

smear slide:	347 cm
Quartz and Feldspar	20
Clay	5
Volcanic glass	25
Diatoms	45
Radiolarians	5
Sponge spicules	<1
Silicoflagellates	<1

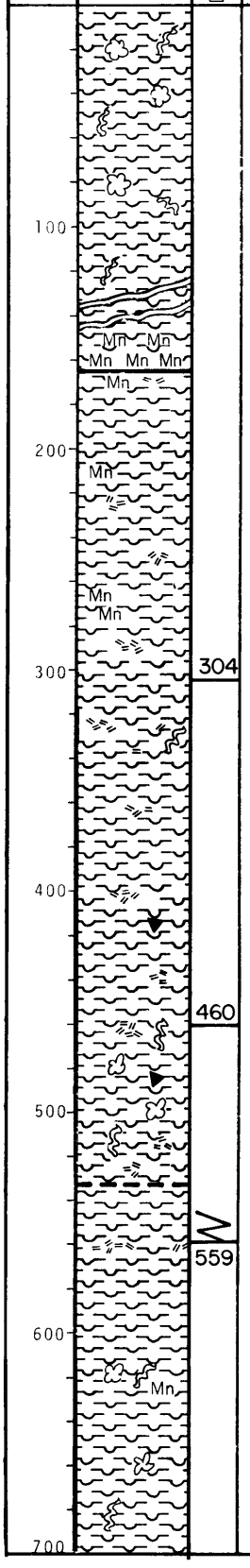
374-988 cm: Diatomaceous ooze, very pale orange (10YR 8/2); abrupt change to flow-in at 378 cm (end of a core section).

Bottom topography: not recorded.

*NOTE: Sediment between 985-988 cm is bagged.

Logged by: Kaharoeddin, Goldstein, Smolko, Eggers, Graves

ISLAS ORCADAS PC 1277-12



LATITUDE: 54°00.6' S
LONGITUDE: 19°47.5' E
CORR. DEPTH: 3173 M, 1733 FM
CORE LENGTH: 1170 CM

LITHOLOGIC DESCRIPTION

0-165 cm: Diatomaceous ooze, light olive gray (5Y 5/2), gradationally changing to grayish orange (10YR 7/4) at 46 cm, mottled with yellowish gray (5Y 7/2) and dusky yellowish brown (10YR 2/2); highly stained with manganese oxides between 157-165 cm, moderately stained with manganese oxides between 148-157 cm; small patches slightly stained with manganese oxides between 36-43 cm and 75-78 cm; inclined, corrugated lamina of ooze slightly stained with manganese oxides between 130-148 cm; moderately bioturbated between 0-157 cm; sharp contact.

smear slides:	17 cm	104 cm	154 cm
Quartz and Feldspar	1	<1	4
Mica	-	-	1
Heavy minerals	<1	<<1	1
Clay	1	<1	8
Volcanic glass	1	<1	4
Micro-Mn nodules	-	-	2
Carbonate unspecified	4	3	-
Foraminifera	<1	2	-
Diatoms	91	90	76
Radiolarians	1	3	3
Sponge spicules	-	<1	-
Silicoflagellates	1	2	1

165-533 cm: Diatomaceous ooze, predominantly light olive gray (5Y 5/2), becoming yellowish gray (5Y 7/2) between 200-265 cm and 407-491 cm; slightly mottled between 478-502 cm; volcanic ash up to 1 mm abundant between 165-170 cm, 320-340 cm and 495-522 cm, common between 225-255 cm, 280-320 cm and 340-495 cm; highly stained with manganese oxides between 165-170 cm, 213-216 cm, 264-279 cm; small patches moderately stained with manganese oxides between 202-204 cm, 223-226 cm, 230-231 cm; zone of increasing mud content between 180-200 cm; 6 mm scoriae between 414-415 cm and 484-485 cm; slightly bioturbated between 323-340 cm and 452-533 cm; slightly washed along the side between 298-304 cm and 440-495 cm; gradational contact.

smear slides:	183 cm	238 cm	322 cm	451 cm
Quartz and Feldspar	5	15	5	10
Mica	<1	<1	-	<1
Heavy minerals	2	2	<1	2
Clay	30	14	17	8
Volcanic glass	6	7	4	7
Diatoms	56	60	72	70
Radiolarians	1	2	2	2
Sponge spicules	<1	-	<<1	-
Silicoflagellates	<1	<1	<1	1

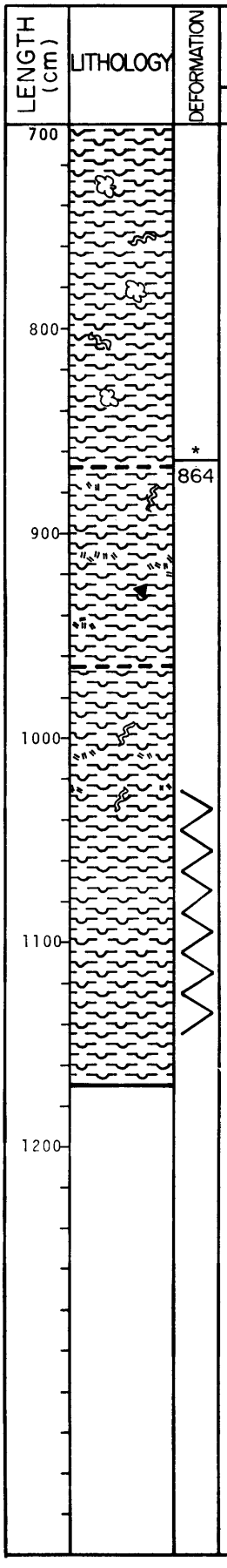
533-867 cm: Diatomaceous ooze, very pale orange (10YR 8/2), slightly mottled between 615-867 cm; highly stained with manganese oxides between 626-629 cm; layer of ooze rich in volcanic ash between 559-562 cm, dusky yellowish brown (10YR 2/2); slightly bioturbated between 610-810 cm; moderately disturbed (washed) between 545-559 cm; slightly washed along the side between 620-825 cm; gradational contact.

smear slides:	559 cm	769 cm
Quartz and Feldspar	1	<1
Heavy minerals	<1	<<1
Clay	<1	<1
Volcanic glass	2	<<1
Diatoms	96	97
Radiolarians	<1	2
Silicoflagellates	1	1

CONTINUED - NEXT PAGE

Logged by: Kaharoeddin, Graves, Goldstein

ISLAS ORCADAS PC 1277-12



LATITUDE: 54°00.6′ S
LONGITUDE: 19°47.5′ E
CORR. DEPTH: 3178 M, 1738 FM
CORE LENGTH: 1170 CM

LITHOLOGIC DESCRIPTION

CONTINUED

867-965 cm: Diatomaceous ooze, light olive gray (5Y 5/2); volcanic ash abundant between 871-945 cm; zone rich in mud between 880-924 cm; 7 mm scoriae between 930-931 cm; slightly bioturbated between 867-900 cm; gradational contact.

smear slides:	904 cm	927 cm
Quartz and Feldspar	8	4
Heavy minerals	<1	<<1
Clay	25	2
Volcanic glass	8	.7
Diatoms	57	85
Radiolarians	2	2
Sponge spicules	-	<1
Silicoflagellates	<1	<<1

965-1170 cm: Diatomaceous ooze, yellowish gray (5Y 7/2), gradationally changing to very pale orange (10YR 8/2) at 1034 cm; volcanic ash up to 1 mm abundant between 1004-1011 cm, and sparsely scattered between 965-1004 cm; lamina of ooze rich in fine volcanic ash between 1024-1025 cm, light olive gray (5Y 5/2); slightly bioturbated between 990-1035 cm; highly disturbed (washed) between 1026-1145 cm.

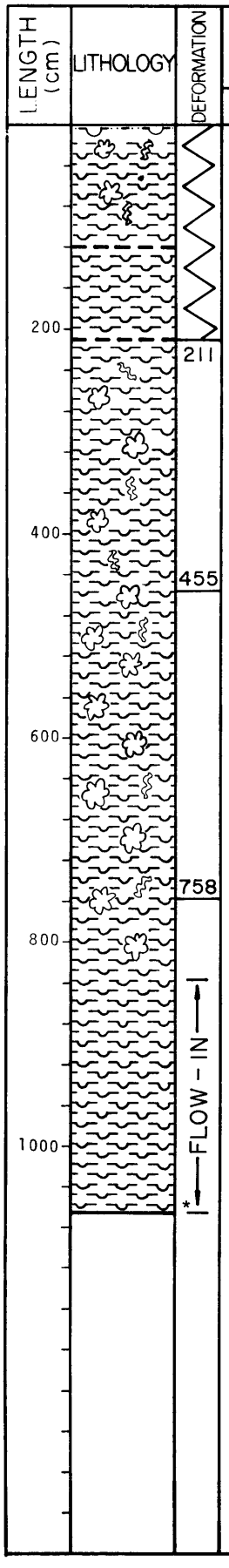
smear slide:	986 cm
Quartz and Feldspar	3
Clay	3
Volcanic glass	2
Diatoms	90
Radiolarians	2
Silicoflagellates	<1

Bottom topography: not recorded.

NOTE: *Sediment between 862-864 cm is bagged.

Logged by: Kaharoeddin, Graves, Goldstein

ISLAS ORCADAS PC 1277-13



LATITUDE: 56°16.0′ S
LONGITUDE: 19°04.2′ E
CORR. DEPTH: 4100 M, 2242 FM
CORE LENGTH: 1066 CM

LITHOLOGIC DESCRIPTION

0-121 cm: Diatomaceous ooze, predominantly pale yellowish brown (10YR 6/2), becoming dark yellowish brown (10YR 4/2) between 0-12 cm and 71-118 cm; diatomaceous ooze, very pale orange (10YR 8/2), washed from the underlying unit and deposited along the side; slightly mottled throughout; highly stained with manganese oxides between 16-17 cm and 101-104 cm; moderately stained with manganese oxides between 2-9 cm; slightly stained with manganese oxides between 71-118 cm; volcanic ash up to 1 mm sparsely scattered between 2-12 cm, and 58-75 cm; 6 cm layer of diatomaceous mud between 2-8 cm; 2 cm pebble encrusted with manganese oxides between 49-51 cm, probably not in situ because it is embedded in diatomaceous ooze washed from the underlying unit; moderately bioturbated between 8-25 cm; slightly bioturbated between 70-121 cm; highly disturbed (washed) between 10-121 cm; highly disturbed on one-half of the core by a piece of core liner embedded between 0-10 cm, and slightly disturbed on the other half between 0-10 cm; gradational contact.

smear slides:	5 cm	90 cm
Quartz and Feldspar	2	4
Heavy minerals	<<1	<1
Clay	47	10
Volcanic glass	5	<1
Carbonate unspecified	4	-
Diatoms	40	80
Radiolarians	2	4
Sponge spicules	<1	<<1
Silicoflagellates	<<1	2

121-211 cm: Diatomaceous ooze, highly mixed vertically due to washing, very pale orange (10YR 8/2) and pale yellowish brown (10YR 6/2); has appearance of mottling due to washing; highly disturbed (washed); gradational contact.

smear slide:	126 cm
Quartz and Feldspar	2
Clay	5
Volcanic glass	1
Diatoms	85
Radiolarians	1
Silicoflagellates	6

211-1066 cm: Diatomaceous ooze, pale yellowish brown (10YR 6/2), gradationally changing to grayish orange (10YR 7/4) at 500 cm; moderately mottled between 211-500 cm; highly mottled between 500-834 cm; moderately bioturbated between 223-280 cm and 320-834 cm; abrupt change to flow-in at 834 cm.

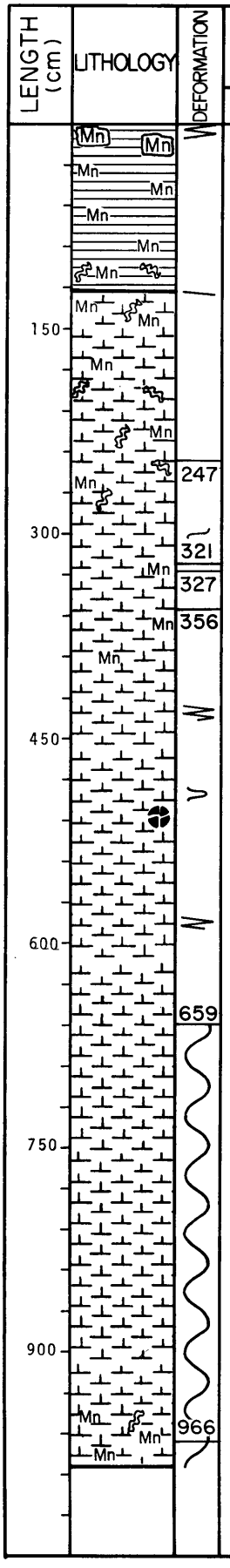
smear slides:	217 cm	382 cm	512 cm	695 cm
Quartz and Feldspar	3	2	2	1
Heavy minerals	-	<1	<1	<<1
Clay	<1	3	1	5
Volcanic glass	<1	1	<1	<1
Diatoms	92	81	86	90
Radiolarians	2	10	8	2
Sponge spicules	-	-	-	<1
Silicoflagellates	3	3	3	2

Bottom topography: not recorded (thick sediment cover).

*NOTE: Sediment between 1063-1066 cm is bagged.

Logged by: Kaharoeddin, Goldstein, Eggers, Graves, Jones

ISLAS ORCADAS PC 1277-14



LATITUDE: 58°26.5' S
LONGITUDE: 18°14.9' E
CORR. DEPTH: 4682 M, 2560 FM
CORE LENGTH: 984 CM

LITHOLOGIC DESCRIPTION

NOTE: Sediment between 327-356 cm was contained in two short sections. Since these sections were unmarked as to their orientation (up or down), their relative positions are unknown. In addition, the basal 18 cm of this core was also contained in an unmarked section; its relative orientation is also unknown. Depths below 327 cm may be up to 5 cm greater than recorded due to shipboard loss.

0-122 cm: Pelagic clay, dark yellowish brown (10YR 4/2), gradationally changing at 95 cm to moderate yellowish brown (10YR 5/4); micro-manganese nodules abundant throughout; zeolite content increases below 45 cm; two 3 cm manganese nodules between 0-3 cm, and 17-20 cm; manganese nodule between 0-3 cm is covered with worm tubes on one side; moderately bioturbated between 104-122 cm; moderately disturbed (washed) between 0-8 cm; sharp contact.

smear slides:	16 cm	72 cm	115 cm
Quartz and Feldspar	10	7	5
Clay	81	69	67
Volcanic glass	2	1	2
Micro-Mn nodules	<1	2	1
Zeolite	3	20	25
Carbonate unspecified	1	1	-
Calcareous nannos	<<1	-	-
Diatoms	3	-	-
Radiolarians	<1	-	-
Sponge spicules	<1	-	-

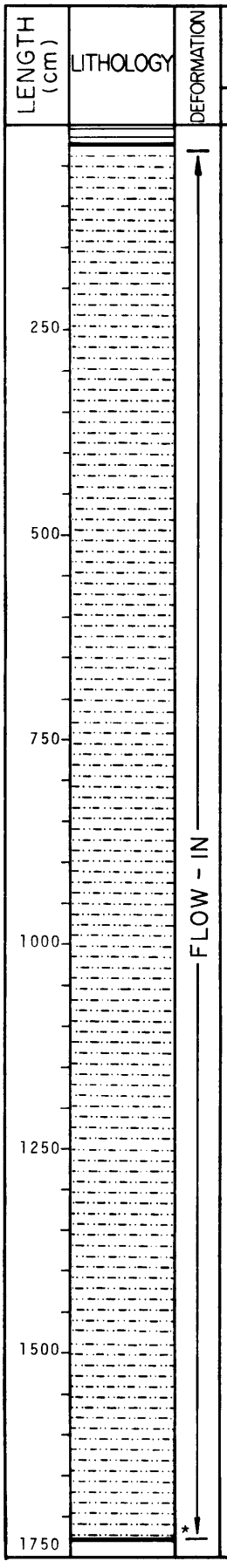
122-984 cm: Nannofossil ooze, very pale orange (10YR 8/2); micro-manganese nodules common between 122-400 cm and 944-984 cm, sparsely scattered between 400-944 cm; 2 mm, sharply inclined laminae rich in micro-manganese nodules between 161-166 cm, 219-224 cm and 230-235 cm; 5 mm lamina convexing toward the side between 300-305 cm composed of highly compacted fragments of nannofossil ooze, rich in micro-manganese nodules; sediment highly compacted between 296-304 cm, 486-495 cm, 647-649 cm; 2 cm sedimentary clast between 498-500 cm, composed of nannofossil ooze, highly compacted; moderately bioturbated between 124-144 cm, and 944-948 cm; slightly bioturbated between 192-197 cm, 235-244 cm, and 253-286 cm; moderately disturbed between 122-124 cm, 425-435 cm and 580-588 cm; slightly disturbed between 296-304 cm and 486-495 cm; slightly disturbed between 660-984 cm due to material from overlying sediments being dragged in along the sides during the coring operation.

smear slides:	134 cm	520 cm	954 cm
Quartz and Feldspar	<1	<1	1
Clay	1	2	2
Volcanic glass	-	<1	2
Carbonate unspecified	5	1	2
Foraminifera	2	3	2
Calcareous nannos	92	94	91
Diatoms	-	<1	-

Bottom topography: core was taken on a thin wedge of sediment south of a seamount; soft bottom.

Logged by: Eggers, Graves, Kaharoeddin, Ciesielski

ISLAS ORCADAS PC 1277-15



LATITUDE: 59°31.5′ S
LONGITUDE: 17°50.6′ E
CORR. DEPTH: 5066 M, 2770 FM
CORE LENGTH: 1727 CM

LITHOLOGIC DESCRIPTION

0-23 cm: Pelagic clay, dark yellowish brown (10YR 4/2); sharp contact.

smear slide:	12 cm
Quartz and Feldspar	8
Mica	<1
Heavy minerals	3
Clay	66
Volcanic glass	5
Micro-Mn nodules	1
Zeolites	<1
Diatoms	15
Radiolarians	2
Sponge spicules	<1
Silicoflagellates	<1

23-1727 cm: Mud, light olive gray (5Y 5/2); varies in diatom and silt content; abrupt change to flow-in at 30 cm.

smear slides:	24 cm	28 cm	90 cm
Quartz and Feldspar	20	70	12
Mica	2	3	<1
Heavy minerals	4	10	2
Clay	45	8	66
Volcanic glass	1	<1	<1
Micro-Mn nodules	<1	-	<1
Diatoms	25	6	20
Radiolarians	1	<1	<1
Sponge spicules	2	3	<1
Silicoflagellates	<1	<1	<1

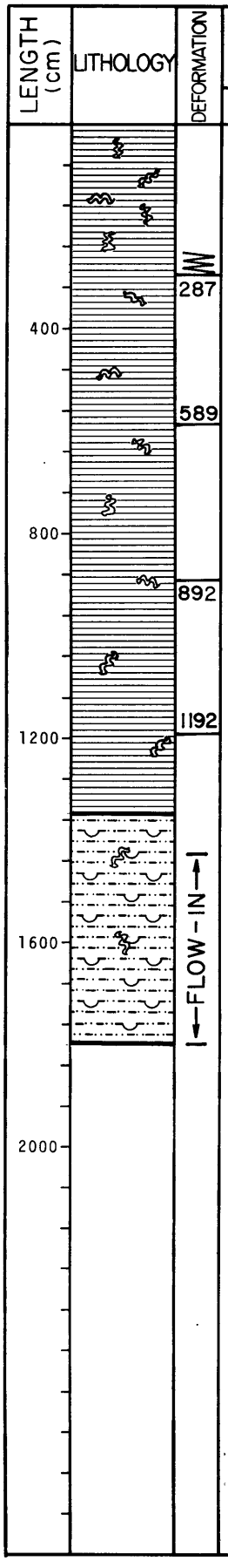
Bottom topography: not recorded.

NOTE: Although flow-in is not well-defined in this core, there is evidence of flow-in at many positions within the sediment. Information recorded on the decklog indicates that the corer was "bounced" twice on the bottom (double hit), and that the bottom sediment may have been very soft, factors to which the excessive length of flow-in is attributed.

*Sediment between 1724-1727 cm is bagged.

Logged by: Jones, Ciesielski, Smolko, Kaharoeddin

ISLAS ORCADAS PC 1277-16



LATITUDE: 61°01.8′ S
LONGITUDE: 17°26.7′ E
CORR. DEPTH: 4921 M, 2691 FM
CORE LENGTH: 1801 CM

LITHOLOGIC DESCRIPTION

0-1351 cm: Pelagic clay, color varies; between 0-180 cm and 1010-1240 cm light olive gray (5Y 5/2); between 180-1010 cm and 1240-1351 cm dark yellowish brown (10YR 4/2), color gradationally changing at 180 cm and 1010 cm, abrupt change at 1240 cm; increasing silt content with depth; small patches moderately stained with manganese oxides, sparsely scattered between 290-1351 cm; slightly bioturbated between 10-50 cm, 75-80 cm, 130-140 cm, 170-190 cm, 210-1351 cm; highly disturbed (washed) between 275-288 cm; sharp contact.

smear slides:	6 cm	164 cm	313 cm	646 cm	917 cm	1249 cm
Quartz and Feldspar	7	10	15	17	15	18
Mica	1	-	1	2	1	1
Heavy minerals	4	5	4	5	4	4
Clay	77	80	72	74	75	72
Volcanic glass	<<1	<<1	1	1	<1	2
Micro-Mn nodules	-	-	<1	<1	-	<1
Diatoms	10	5	7	1	5	3
Radiolarians	1	-	<1	<1	<1	<1
Sponge spicules	<1	<1	<1	<1	<1	1
Silicoflagellates	<<1	<<1	<<1	-	<1	-

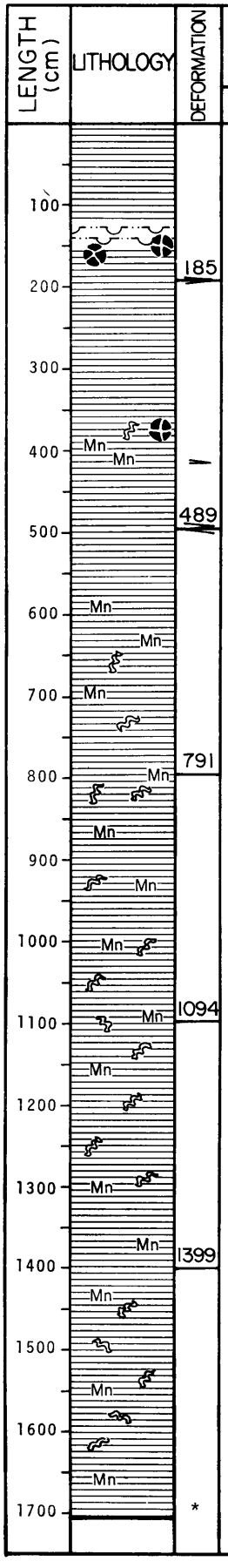
1351-1801 cm: Diatomaceous mud, light olive gray (5Y 5/2); small patches moderately stained with manganese oxides sparsely scattered throughout; slightly bioturbated throughout; abrupt change to flow-in at 1429 cm.

smear slide:	1393 cm
Quartz and Feldspar	10
Mica	<<1
Heavy minerals	<1
Clay	51
Micro-Mn nodules	<1
Diatoms	35
Radiolarians	3
Sponge spicules	<1
Silicoflagellates	1

Bottom topography: flat bottom; soft sediment.

Logged by: Kaharoeddin, Goldstein, Graves, Eggers, Hattner, Jones

ISLAS ORCADAS PC 1277-17



LATITUDE: 61°59.3′ S
LONGITUDE: 16°57.7′ E
CORR. DEPTH: 4998 M; 2733 FM
CORE LENGTH: 1705 CM

LITHOLOGIC DESCRIPTION

0-1705 cm: Pelagic clay, predominantly dark yellowish brown (10YR 4/2), becoming light olive gray (5Y 5/2) between 0-20 cm, 120-165 cm, 210-265 cm, 320-365 cm and 1310-1341 cm; silt content varies down the core; diatom content decreases below 480 cm; small patches highly stained with manganese oxides, and occasionally containing micro-manganese nodules, abundant between 372-445 cm, 595-720 cm, 770-1310 cm, and 1345-1705 cm; layers and laminae of muddy, diatomaceous ooze between 131-145 cm; sedimentary clasts up to 2 cm between 145-155 cm and 372-383 cm, composed of muddy, diatomaceous ooze, soft; highly bioturbated between 370-390 cm, 810-1310 cm, and 1440-1620 cm; slightly bioturbated between 600-720 cm and 740-745 cm; highly disturbed (watery) between 430-432 cm; moderately disturbed (washed) between 180-190 cm, and 481-492 cm; slightly washed along the side between 150-180 cm.

smear slides:	10 cm	78 cm	117 cm	143 cm	235 cm	388 cm
Quartz and Feldspar	14	30	15	5	13	12
Mica	1	2	1	<1	1	1
Heavy minerals	6	8	4	2	4	5
Clay	57	45	45	25	73	74
Volcanic glass	2	5	3	1	1	1
Micro-Mn nodules	-	-	-	-	-	<1
Foraminifera	-	-	-	-	-	<<1
Diatoms	20	8	30	61	8	7
Radiolarians	<1	1	2	4	<1	<1
Sponge spicules	<<1	1	<1	<<1	<1	<1
Silicoflagellates	<<1	<1	-	2	<1	<<1

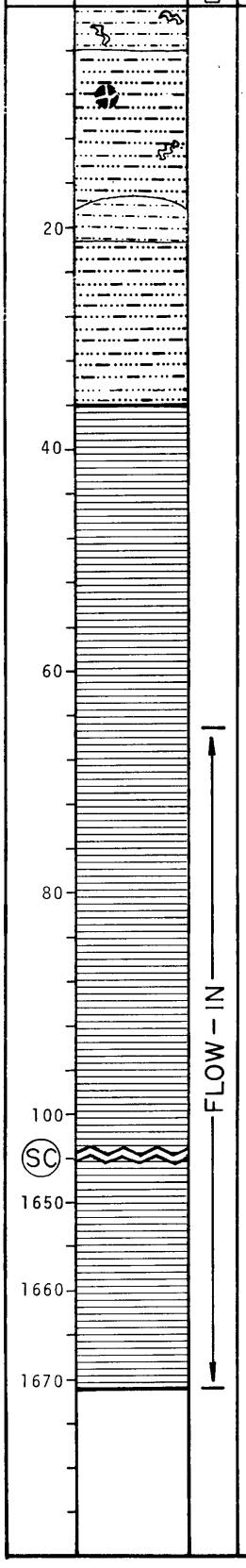
	535 cm	640 cm	808 cm	1077 cm	1482 cm	1694 cm
Quartz and Feldspar	20	15	10	20	17	15
Mica	1	1	2	2	2	1
Heavy minerals	3	8	3	5	5	4
Clay	71	71	83	69	72	76
Volcanic glass	<1	<1	<1	1	1	-
Micro-Mn nodules	<1	-	-	-	<1	<1
Diatoms	5	5	2	3	3	4
Radiolarians	<1	<1	<1	-	-	-
Sponge spicules	<1	<1	<1	<1	<1	<1
Silicoflagellates	<<1	<<1	<<1	-	-	<<1

Bottom topography: flat bottom; soft sediment.

*NOTE: Sediment between 1704-1705 cm is bagged.

Logged by: Kaharoeddin, Graves, Goldstein

ISLAS ORCADAS PC 1277-18



LATITUDE: 63°00.1′ S
LONGITUDE: 16°37.1′ E
CORR. DEPTH: 5022 M, 2746 FM
CORE LENGTH: 1671 CM

LITHOLOGIC DESCRIPTION

0-36 cm: Silt, light olive gray (5Y 5/2); unit consists of two cycles, with sharp, upward-convexing contact at 18 cm; each cycle consists of layers of mud (between 0-4 cm and 18-21 cm) overlying layers of silt; silt content increases gradually between 4-16 cm and 21-33 cm; layer composed predominantly of medium silt- to coarse silt-size quartz particles between 16-18 cm and 33-36 cm; 1 cm lamina between 2-3 cm composed predominantly of silt-size quartz particles, slightly compacted; 2 cm sedimentary clast between 8-10 cm, composed of clay, moderate olive brown (5Y 4/4), soft; clast is slightly elongated on one side, possibly due to being dragged in during coring operation; slightly bioturbated between 0-1 cm, 3-4 cm and 12-13 cm; sharp contact.

smear slide:	24 cm
Quartz and Feldspar	65
Heavy minerals	5
Clay	15
Volcanic glass	5
Diatoms	5
Radiolarians	2
Sponge spicules	3
Silicoflagellates	<<1

36-1671 cm: Pelagic clay, moderate olive brown (5Y 4/4); gradational change to flow-in at 65 cm.

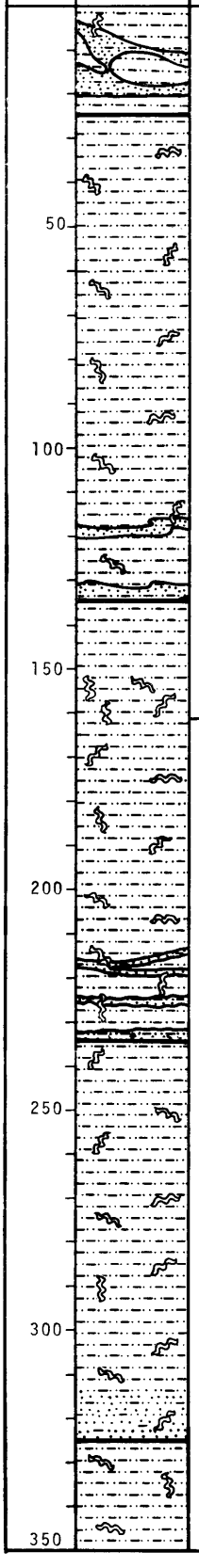
smear slide:	44 cm
Quartz and Feldspar	22
Heavy minerals	2
Clay	60
Volcanic glass	7
Micro-Mn nodules	<1
Diatoms	8
Sponge spicules	1
Silicoflagellates	<<1

Bottom topography: flat; thick sediment cover, very soft.

NOTE: Decklog record shows that trigger cable wrapped around release arm and core pipe, with no trigger recovery, and that piston was covered with mud. Apparently, the pipe did not fall to the bottom by gravity. This might explain the long flow-in in this core.

Logged by: Eggers, Kaharoeddin, Goldstein, Graves

ISLAS ORCADAS PC 1277-19



LATITUDE: 63°59.7′ S CORR. DEPTH: 4949 M, 2706 FM

LONGITUDE: 16°11.2′ E CORE LENGTH: 1674 CM

LITHOLOGIC DESCRIPTION

0-1674 cm: Mud, varies cyclically in color, silt, and sand content; each cycle grading upward from coarse fraction (fine sand or silt) to clay; each cycle may consist of up to 6 subcycles; each cycle or subcycle has color grading upward from light olive gray (5Y 5/2) to dark yellowish brown (10YR 4/2), slightly stained with manganese oxides in the upper dark yellowish brown portion of the cycle or subcycle; the cycles, from top to bottom are as follows:

0-24 cm: Mud, with high silt content, unfinished cycle, light olive gray (5Y 5/2); coarse fractions concentrate in irregular bodies; moderately bioturbated between 0-5 cm; sharp contact.

smear slide:	9 cm		
Quartz and Feldspar	71	Volcanic glass	<1
Mica	2	Diatoms	<1
Heavy minerals	10	Sponge spicules	<1
Clay	17		

24-134 cm: Mud, with 6 subcycles, each with sharp boundaries at 24 cm, 42 cm, 83 cm, 92 cm, and 123 cm; irregular body of silt and fine sand between 117-120 cm and 129-134 cm; moderately bioturbated throughout; sharp contact.

smear slides:	31 cm	91 cm
Quartz and Feldspar	23	57
Mica	2	3
Heavy minerals	6	10
Clay	69	30
Volcanic glass	<<1	<1
Micro-Mn nodules	-	<<1
Diatoms	<1	<<1
Radiolarians	<<1	-
Sponge spicules	<1	-

134-234 cm: Mud, with 3 subcycles, each with sharp boundaries at 159 cm and 183 cm; stringers of silt and fine sand between 214-234 cm; highly bioturbated between 153-159 cm, slightly to moderately bioturbated in the remainder of the cycle; sharp contact.

smear slides:	144 cm	166 cm
Quartz and Feldspar	25	10
Mica	1	<1
Heavy minerals	5	3
Clay	69	87
Volcanic glass	<1	<1
Diatoms	<<1	<<1
Sponge spicules	<<1	<<1

234-325 cm: Mud, with 2 subcycles, sharp boundary at 275 cm; gradational increase of silt content beginning at 312 cm; slightly bioturbated throughout; sharp contact.

smear slide:	293 cm		
Quartz and Feldspar	18	Volcanic glass	<1
Mica	<1	Diatoms	<<1
Heavy minerals	6	Sponge spicules	<<1
Clay	76		

325-357 cm: Mud, one complete cycle; abrupt increase in silt content at 350 cm; slightly bioturbated throughout; inclined, sharp contact.

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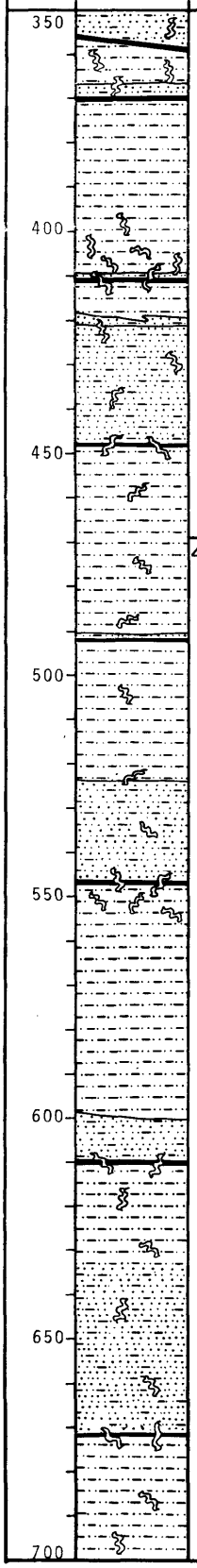
Logged by: Kaharoeddin, Goldstein, Smolko, Graves

ISLAS ORCADAS PC 1277-19



LATITUDE: 63°59.7′ S
LONGITUDE: 16°11.2′ E
CORR. DEPTH: 4949 M, 2706 FM
CORE LENGTH: 1674 CM

LITHOLOGIC DESCRIPTION

CONTINUED

smear slide: 352 cm

Quartz and Feldspar	75	Clay	2
Mica	<1	Glauconite	8
Heavy minerals	15	Sponge spicules	<<1

357-370 cm: Mud, one complete cycle; abrupt increase in silt content at 367 cm; slightly bioturbated throughout; sharp contact.

370-411 cm: Mud, with 2 subcycles, bioturbated sharp boundary at 394 cm; abrupt increase in silt content at 409 cm; moderately bioturbated between 403-409 cm and slightly bioturbated in the remainder of the cycle; bioturbated, sharp contact.

smear slide: 384 cm

Quartz and Feldspar	73	Clay	15
Mica	2	Volcanic glass	<1
Heavy minerals	10	Sponge spicules	<1

411-448 cm: Mud, with 2 subcycles, bioturbated sharp boundary at 428 cm; stringers of silt and sand between 418-420 cm; gradual increase of silt and sand content at 421 cm; slightly bioturbated throughout; bioturbated, sharp contact.

smear slide: 447 cm

Quartz and Feldspar	76	Volcanic glass	1
Mica	1	Glauconite	<1
Heavy minerals	7	Sponge spicules	<1
Clay	15		

448-492 cm: Mud, with 2 subcycles, bioturbated sharp boundary at 472 cm; abrupt increase in silt content at 490 cm; slightly bioturbated throughout; sharp contact.

492-547 cm: Mud, one complete cycle; abrupt increase in silt and sand content at 523 cm; slightly bioturbated throughout; bioturbated, sharp contact.

smear slide: 533 cm

Quartz and Feldspar	74	Volcanic glass	1
Mica	1	Diatoms	<1
Heavy minerals	7	Radiolarians	<1
Clay	15	Sponge spicules	2

547-610 cm: Mud, with 2 subcycles, bioturbated sharp boundary at 558 cm; abrupt increase in silt and sand content at 599 cm; moderately bioturbated between 547-559 cm; bioturbated, sharp contact.

smear slide: 607 cm

Quartz and Feldspar	75	Glauconite	7
Mica	3	Diatoms	1
Heavy minerals	10	Radiolarians	<1
Clay	1	Sponge spicules	1
Volcanic glass	2		

610-672 cm: Mud, one complete cycle; gradational increase in silt content at 635 cm; slightly bioturbated throughout; bioturbated, sharp contact.

672-764 cm: Mud, with 3 subcycles, bioturbated sharp boundary at 677 cm and 700 cm; gradual increase in silt and sand at 749 cm; slightly bioturbated throughout; bioturbated, sharp contact.

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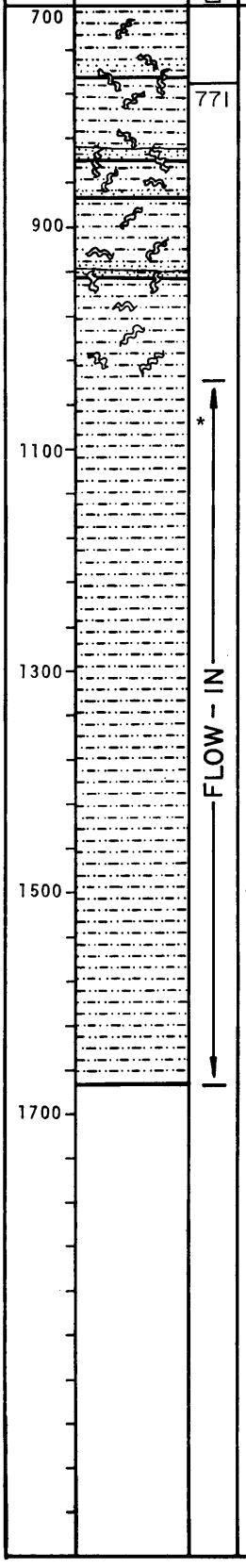
Logged by: Kaharoeddin, Goldstein, Smolko, Graves

ISLAS ORCADAS PC 1277-19

(SC)

LATITUDE: 63°59.7′ S
LONGITUDE: 16°11.2′ E
CORR. DEPTH: 4949 M, 2706 FM
CORE LENGTH: 1674 CM



LITHOLOGIC DESCRIPTION

CONTINUED

764-841 cm: Mud, one complete cycle; stringers of silt and sand between 771-775 cm; abrupt increase in silt and sand at 828 cm; slightly bioturbated throughout; bioturbated, sharp contact.

smear slides:	768 cm	796 cm
Quartz and Feldspar	41	20
Mica	3	2
Heavy minerals	3	3
Clay	50	65
Volcanic glass	1	-
Glauconite	<1	-
Diatoms	1	8
Sponge spicules	1	2

841-875 cm: Mud, one complete cycle; gradual increase in silt and sand at 867 cm; moderately bioturbated throughout; sharp contact.

875-947 cm: Mud, with 2 subcycles, bioturbated sharp boundary at 929 cm; abrupt increase in silt and sand at 943 cm; moderately bioturbated between 930-940 cm; slightly bioturbated in the remainder of the cycle; bioturbated, sharp contact.

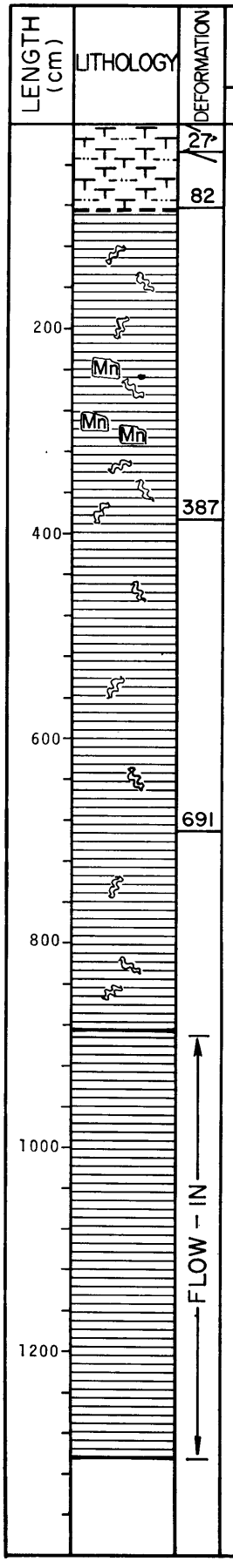
947-1674 cm: Mud, probably one cycle, includes flow-in; moderately to highly bioturbated between 1007-1039 cm; slightly bioturbated in the remainder of the cycle; abrupt change to flow-in at 1039 cm.

Bottom topography: not recorded.

*NOTE: Sediment between 465-469 cm and 1077-1081 cm is bagged.

Logged by: Kaharoeddin, Goldstein, Smolko, Graves

ISLAS ORCADAS PC 1277-20



LATITUDE: 65°00.1′ S CORR. DEPTH: 3886 M, 2125 FM

LONGITUDE: 15°44.6′ E CORE LENGTH: 1304 CM

LITHOLOGIC DESCRIPTION

0-84 cm: Marly, foraminiferal ooze, light olive gray (5Y 5/2); decreasing foraminifera content with depth; highly disturbed (washed) between 0-37 cm, with piece of plastic liner embedded between 7-22 cm; gradational contact.

smear slides:	10 cm	78 cm
Quartz and Feldspar	7	7
Mica	1	2
Heavy minerals	1	2
Clay	49	48
Volcanic glass	1	1
Micro-Mn nodules	<1	<1
Carbonate unspecified	8	10
Foraminifera	33	30
Diatoms	<1	-
Radiolarians	<<1	-
Sponge spicules	<<1	-

84-886 cm: Pelagic clay, light olive gray (5Y 5/2); zone rich in foraminifera between 259-263 cm; micro-manganese nodules and patches stained with manganese oxides sparsely scattered throughout; manganese nodule between 239-241 cm (1.5 cm), 295-298 cm (3 cm), and 302-305 cm (2.5 cm); 3 mm gravel between 246-247 cm; moderately bioturbated between 84-400 cm and 808-882 cm; slightly bioturbated between 400-808 cm; sharp contact.

smear slides:	86 cm	146 cm	190 cm	392 cm	628 cm	733 cm
Quartz and Feldspar	5	12	15	15	15	12
Mica	1	1	1	1	2	<1
Heavy minerals	2	2	3	2	6	5
Clay	81	84	80	65	74	83
Volcanic glass	1	<1	1	2	<1	<1
Micro-Mn nodules	-	<1	<1	-	-	-
Carbonate unspecified	6	1	<1	-	-	-
Foraminifera	4	<1	-	-	-	-
Diatoms	-	-	-	10	3	<1
Radiolarians	-	-	-	3	<<1	-
Sponge spicules	-	-	-	2	<1	<1

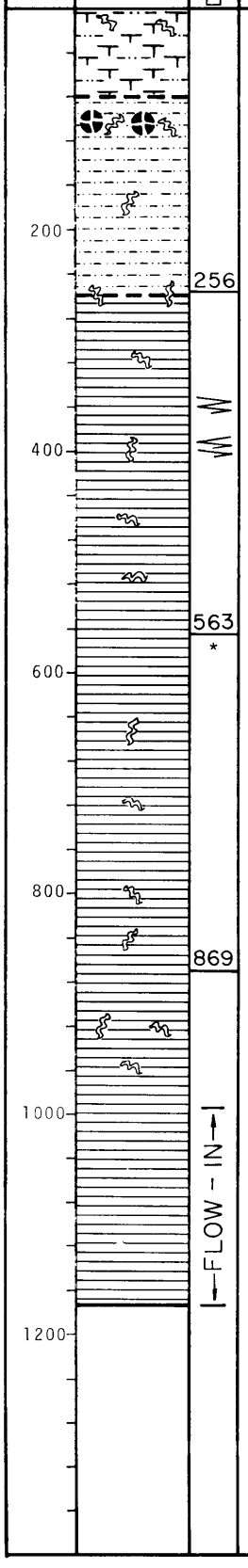
886-1304 cm: Pelagic clay, dusky yellow (5Y 6/4); micro-manganese nodules sparsely scattered throughout; gradational change to flow-in at 891 cm.

smear slide:	889 cm
Quartz and Feldspar	15
Mica	2
Heavy minerals	3
Clay	74
Volcanic glass	1
Zeolite	5
Diatoms	<1

Bottom topography: not recorded.

Logged by: Goldstein, Kaharoeddin, Smolko, Graves, Jones

ISLAS ORCADAS PC 1277-21



LATITUDE: 66°00.8′ S
LONGITUDE: 15°20.4′ E
CORR. DEPTH: 3603 M, 1970 FM
CORE LENGTH: 1172 CM

LITHOLOGIC DESCRIPTION

0-80 cm: Marly, foraminiferal ooze, light olive gray (5Y 5/2); highly bioturbated between 0-32 cm; gradational contact. NOTE: Smear slides slightly biased toward fine fraction (clay).

smear slides:	3 cm	72 cm
Quartz and Feldspar	12	8
Mica	1	1
Heavy minerals	4	2
Clay	46	47
Volcanic glass	2	2
Carbonate unspecified	4	10
Foraminifera	30	30
Calcareous nannos	<1	-
Diatoms	1	<1
Sponge spicules	<1	<1

80-260 cm: Mud, light olive gray (5Y 5/2); varies in silt content; small patches slightly stained with manganese oxides common between 90-125 cm, and sparsely scattered between 125-160 cm; several sedimentary clasts up to 1.5 cm scattered between 90-110 cm, composed of clay rich in heavy minerals and fine silt-size quartz particles; moderately bioturbated between 80-120 cm; slightly bioturbated between 120-190 cm; gradational, bioturbated contact.

smear slide:	162 cm
Quartz and Feldspar	18
Mica	<1
Heavy minerals	3
Clay	77
Volcanic glass	1
Zeolite	1
Diatoms	<1
Sponge spicules	<<1

260-1172 cm: Pelagic clay, yellowish gray (5Y 7/2); varies in diatom content: micro-manganese nodules and manganese oxide staining in small patches sparsely scattered throughout; moderately bioturbated between 930-980 cm; slightly bioturbated between 260-540 cm and 650-865 cm; highly disturbed (washed) between 349-363 cm and 388-406 cm; abrupt change to flow-in at 993 cm.

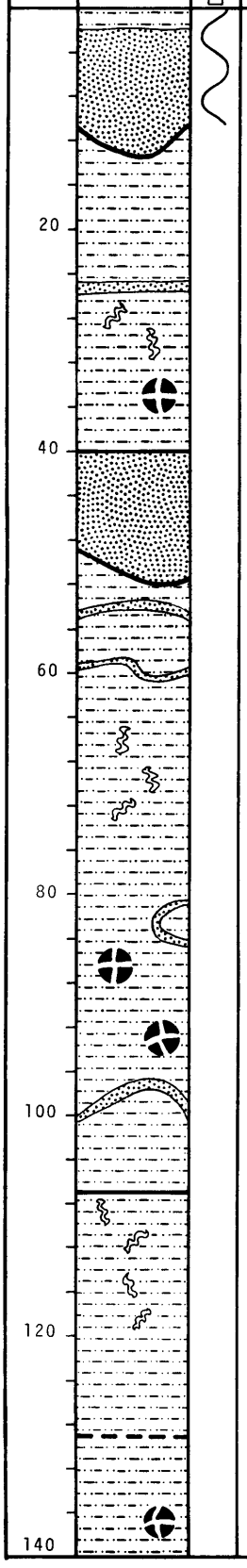
smear slides:	438 cm	585 cm	739 cm	945 cm	992 cm
Quartz and Feldspar	8	10	8	10	7
Mica	<1	<1	<1	<1	<<1
Heavy minerals	1	1	1	3	2
Clay	67	63	69	74	62
Volcanic glass	1	1	1	<1	<1
Diatoms	20	25	20	12	27
Radiolarians	3	<1	1	<1	1
Sponge spicules	<1	<1	<1	1	1
Silicoflagellates	<1	-	-	-	<1

Bottom topography: not recorded (soft sediment).

*NOTE: Sediment between 563-565 cm is bagged.

Logged by: Kaharoeddin, Graves, Hattner, Eggers, Jones, Goldstein

ISLAS ORCADAS PC 1277-22



LATITUDE: 67°01.2′ S
LONGITUDE: 14°52.4′ E
CORR. DEPTH: 3904 M, 2135 FM
CORE LENGTH: 1194 CM

LITHOLOGIC DESCRIPTION

0-13 cm: Very fine sand, olive gray (5Y 4/1); 0-2 cm consists of a lamina of mud; sand size increases slightly with depth between 2-13 cm; horizontal stratification is apparent toward the bottom; unit is slightly disturbed; sharp, irregular contact convexing downward; contact looks like a load cast (erosional feature).

smear slide: 6 cm

Quartz and Feldspar	87	Glauconite	5
Mica	2	Diatoms	<<1
Heavy minerals	5	Radiolarians	<<1
Clay	<1	Sponge spicules	<<1
Volcanic glass	1		

13-40 cm: Mud, light olive gray (5Y 5/2); laminae between 24-25 cm composed predominantly of very fine quartz sand and containing micro-manganese nodules; partially-compacted sedimentary clast between 33-37 cm, composed predominantly of very fine quartz sand, with inclined stratification; moderately bioturbated between 26-33 cm; sharp contact.

smear slide: 18 cm

Quartz and Feldspar	16	Volcanic glass	2
Mica	1	Zeolite	<1
Heavy minerals	1	Carbonate unspecified	<1
Clay	80	Diatoms	<1

40-52 cm: Very fine sand, olive gray (5Y 4/1), grades from very fine to fine sand at the base of unit; apparent horizontal stratification; sharp contact, convexing downward; contact looks like a load cast (erosional feature).

smear slide: 47 cm

Quartz and Feldspar	85	Volcanic glass	2
Mica	2	Glauconite	1
Heavy minerals	10	Diatoms	<<1
Clay	<<1	Sponge spicules	<<1

52-107 cm: Mud, light olive gray (5Y 5/2); 1 cm lamina between 54-55 cm convexing upward; 1 cm lamina between 59-61 cm, sinuous; 0.5 cm lamina between 81-84 cm, convexing to the side; 0.5 cm lamina between 96-100 cm, convexing upward; these laminae are composed predominantly of very fine quartz sand; the convexing structures were probably caused by materials being dragged-in along the side of the liner during coring operation; partially compacted sedimentary clast between 84-88 cm, and soft sedimentary clast between 91-94 cm, both clasts composed predominantly of very fine quartz sand; slightly stained with manganese oxides between 73-80 cm and 91-101 cm; lamina of mud with manganese oxide staining between 106-107 cm; slightly bioturbated between 64-73 cm; sharp contact.

smear slide: 77 cm

Quartz and Feldspar	15	Micro-Mn nodules	1
Heavy minerals	3	Carbonate unspecified	<<1
Clay	75	Diatoms	6
Volcanic glass	<1	Sponge spicules	<1

107-129 cm: Mud, light olive gray (5Y 5/2); differs from the overlying and underlying mud by its foraminiferal content; moderately bioturbated between 107-119 cm; gradational contact.

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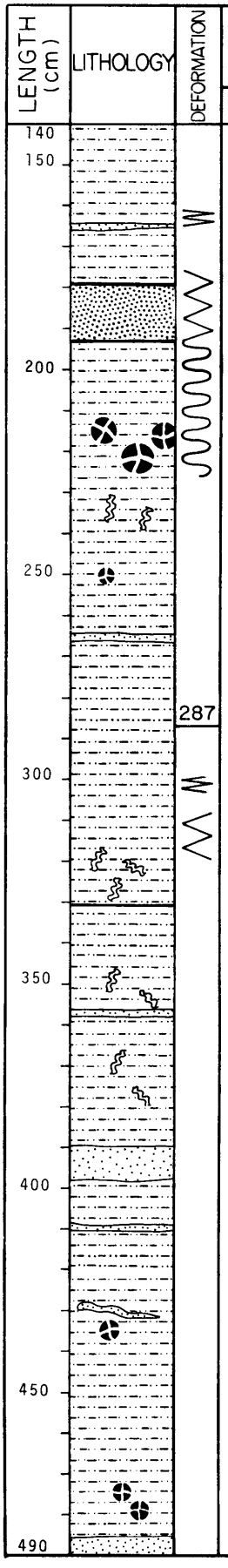
Logged by: Eggers, Kaharoeddin, Goldstein, Graves

(SC)

ISLAS ORCADAS PC 1277-22

LATITUDE: 67°01.2' S
LONGITUDE: 14°52.4' E
CORR. DEPTH: 3904 M, 2135 FM
CORE LENGTH: 1194 CM



LITHOLOGIC DESCRIPTION

CONTINUED

smear slide: 110 cm

Quartz and Feldspar	5	Carbonate unspecified	2
Heavy minerals	2	Foraminifera	11
Clay	79	Diatoms	1
Volcanic glass	<1	Sponge spicules	<<1

129-179 cm: Mud, light olive gray (5Y 5/2); 1 cm lamina between 165-166 cm composed predominantly of very fine quartz sand; 3 cm soft sedimentary clast between 135-138 cm, composed primarily of very fine quartz sand and silt particles; high water content and moderately disturbed between 161-165 cm and 176-179 cm; sharp contact.

smear slide: 170 cm

Quartz and Feldspar	20	Diatoms	2
Heavy minerals	3	Radiolarians	<<1
Clay	75	Sponge spicules	<<1
Volcanic glass	<1		

179-193 cm: Very fine sand, light olive gray (5Y 5/2); unit has high water content with moderate disturbance (washed); sharp contact.

smear slide: 189 cm

Quartz and Feldspar	85	Volcanic glass	1
Mica	3	Glauconite	3
Heavy minerals	8	Diatoms	<<1
Clay	<<1	Sponge spicules	<<1

193-331 cm: Mud, light olive gray (5Y 5/2); sedimentary clasts between 212-226 cm, soft clay clasts mixed with soft to partially compacted clast composed primarily of very fine sand to silt-size quartz particles; clasts are deformed due to washing but retain their angular outlines; partially compacted sedimentary clast between 250-252 cm, composed predominantly of very fine quartz sand; lamina between 265-266 cm rich in silt sized quartz particles and stained with manganese oxides; several irregular patches of moderate manganese oxide staining between 263-270 cm; moderately bioturbated between 231-238 cm and 317-331 cm; slightly disturbed (washed) between 193-226 cm; moderately disturbed (washed, high water content) between 299-303 cm and 307-319 cm; sharp contact.

smear slides:

	272 cm	325 cm		272 cm	325 cm
Quartz and Feldspar	15	15	Volcanic glass	<1	1
Mica	<1	<1	Diatoms	1	3
Heavy minerals	3	3	Radiolarians	<<1	<<1
Clay	81	78	Sponge spicules	<<1	<1

331-1194 cm: Mud, light olive gray (5Y 5/2), changing to moderate olive brown between 331-356 cm and 604-658 cm; zone with high forminiferal content between 541-567 cm; higher carbonate content between 787-1194 cm; layer of very fine quartz sand between 390-398 cm, horizontal stratification apparent between 395-397 cm; layer composed of quartz sand between 486-496 cm, grading from silt-size to fine sand at the bottom; horizontal stratification apparent toward bottom of layer, bottom contact is irregular and sharp; layer of muddy, diatomaceous ooze between 730-748 cm; layer composed of silt-size to very fine quartz sand between 763-767 cm, slightly stained with manganese oxides, and containing fragments of foraminifera.

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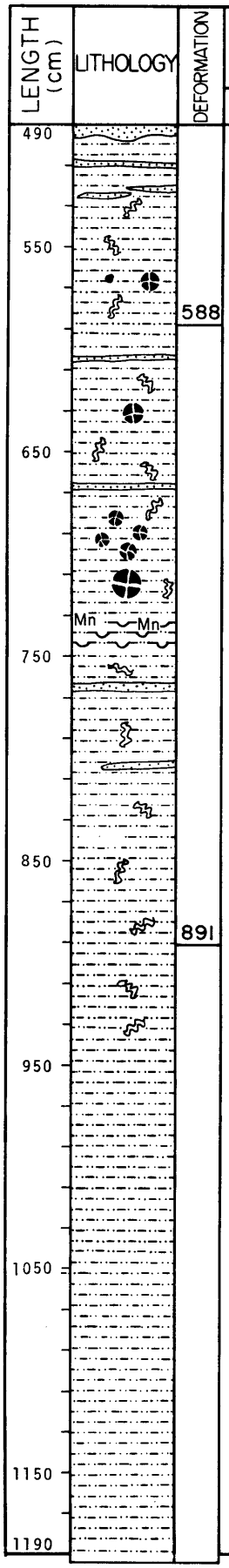
Logged by: Eggers, Kaharoeddin, Goldstein, Graves

ISLAS ORCADAS PC 1277-22



LATITUDE: 67°01.2' S
LONGITUDE: 14°52.4' E
CORR. DEPTH: 3904 M, 2135 FM
CORE LENGTH: 1194 CM

LITHOLOGIC DESCRIPTION

CONTINUED

Laminae composed of very fine quartz sand between 356-358 cm, 409-410 cm, 508-510 cm, 602-604 cm and 666-668 cm; inclined, sinuous stringers between 429-433 cm, discontinuous stringers between 524-527 cm, and stringers containing forminiferal fragments between 804-806 cm; all these stringers composed of silt-size to very fine quartz sand.

Four mm gravel between 563-564 cm, composed of slightly weathered metamorphic rock.

Sedimentary clasts between 432-436 cm, 474-476 cm, 477-481 cm, all composed of very fine quartz sand, soft; sedimentary clasts between 683-685 cm, 688-692 cm, 692-694 cm, 696-702 cm, all composed of very fine quartz sand, partially compacted with apparent stratification; sedimentary clast between 708-721 cm composed of fine to very fine quartz sand; clast is deformed (elongated). Sedimentary clasts between 565-572 cm and 626-637 cm, light olive gray (5Y 5/2), soft, composed of mud, slightly stained with manganese oxides, and containing fragments of foraminifera.

Irregular patches rich in micro-manganese nodules between 611-612 cm and 893-894 cm; zone highly stained with manganese oxides between 734-739 cm; lamina highly stained with manganese oxides between 778-779 cm; micro-manganese nodules, and manganese oxides staining sparsely scattered between 739-1194 cm; slightly bioturbated between 345-380 cm, 528-533 cm and 541-940 cm; bioturbations filled with silt-size and very fine quartz sand between 568-572 cm.

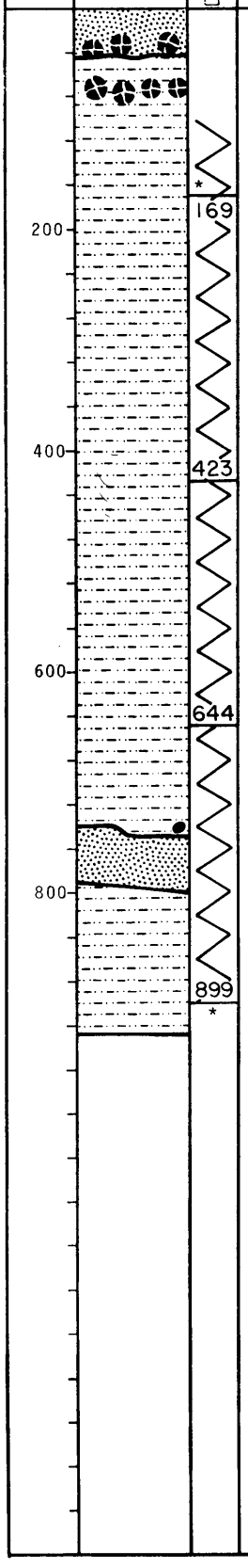
smear slides:	344 cm	377 cm	463 cm	530 cm	547 cm
Quartz and Feldspar	15	20	17	10	10
Mica	<1	<1	1	<1	-
Heavy minerals	2	3	3	5	2
Clay	70	76	78	84	78
Volcanic glass	1	<1	1	1	1
Micro-Mn nodules	-	-	<1	-	-
Carbonate unspecified	-	-	<1	-	2
Foraminifera	-	-	-	-	7
Diatoms	12	1	<1	<1	<1
Radiolarians	<1	<1	-	-	-
Sponge spicules	<1	<<1	<1	<<1	<1

	611 cm	736 cm	861 cm	977 cm	1181 cm
Quartz and Feldspar	12	6	15	17	12
Mica	1	-	1	1	<1
Heavy minerals	2	1	2	1	2
Clay	77	30	67	74	80
Volcanic glass	1	<1	<1	1	<1
Glauconite	<1	-	-	-	-
Zeolite	-	-	<1	-	-
Carbonate unspecified	6	-	8	3	2
Foraminifera	<1	-	7	3	4
Calcareous nannos	-	-	<1	<<1	<<1
Diatoms	1	61	<1	<<1	<<1
Radiolarians	<<1	2	-	-	-
Sponge spicules	<<1	<1	-	-	<<1

Bottom topography: not recorded.

Logged by: Eggers, Kaharoeddin, Goldstein, Graves

ISLAS ORCADAS PC 1277-23



LATITUDE: 67°53.8′ S
LONGITUDE: 14°34.8′ E
CORR. DEPTH: 3698 M, 2022 FM
CORE LENGTH: 924 CM

LITHOLOGIC DESCRIPTION

0-41 cm: Fine sand, olive gray (5Y 3/2); layer of very fine sand between 32-36 cm, containing a 2 mm lamina composed predominantly of heavy minerals between 33-34 cm; several sedimentary clasts up to 3 cm between 29-32 cm, round or elongated, composed of clay, soft, probably dragged into this unit during coring operation; 1 cm sedimentary clast between 39-40 cm, composed of clay, soft; irregular, sharp contact.

smear slide:	11 cm
Quartz and Feldspar	75
Mica	3
Heavy minerals	10
Clay	5
Volcanic glass	<1
Glauconite	7
Carbonate unspecified	<<1
Foraminifera	<1
Sponge spicules	<1

41-754 cm: Mud, light olive gray (5Y 5/2); sedimentary clast between 64-67 cm (2 cm) and 87-89 cm (2 cm); several sedimentary clasts up to 1 cm between 70-80 cm, composed of silt-size quartz particles, slightly compacted; 1 cm angular pebble between 753-754 cm, probably not in situ due to disturbance; highly disturbed between 103-754 cm, with sand found almost continuously along the side of the core, sometimes filling half of the core, or filling the partings to form pseudo-laminae, occasionally forming layers or clumps of sand occurring between 513-520 cm, 530-536 cm, 537-540 cm and 595-600 cm, all not deposited normally; sharp sigmoidal (disturbed) contact between 747-754 cm.

smear slides:	45 cm	98 cm	208 cm	403 cm	593 cm	726 cm
Quartz and Feldspar	76	15	18	30	30	40
Mica	3	1	<1	<1	1	1
Heavy minerals	8	4	5	5	5	6
Clay	10	80	77	65	64	53
Volcanic glass	<1	<<1	<<1	<<1	<1	<1
Glauconite	3	-	-	-	-	<<1
Micro-Mn nodules	-	-	-	<<1	-	-
Carbonate unspecified	-	-	<<1	-	<<1	-
Foraminifera	-	-	-	-	-	<<1
Diatoms	-	<<1	<<1	-	-	-
Sponge spicules	<1	-	-	-	-	-

754-790 cm: Fine sand, olive gray (5Y 3/2); highly disturbed; sharp, inclined contact (between 790-796 cm).

smear slide:	773 cm
Quartz and Feldspar	78
Mica	3
Heavy minerals	10
Clay	1
Volcanic glass	2
Glauconite	6
Carbonate unspecified	<<1
Foraminifera	<1

790-924 cm: Mud, light olive gray (5Y 5/2); highly disturbed (washed).

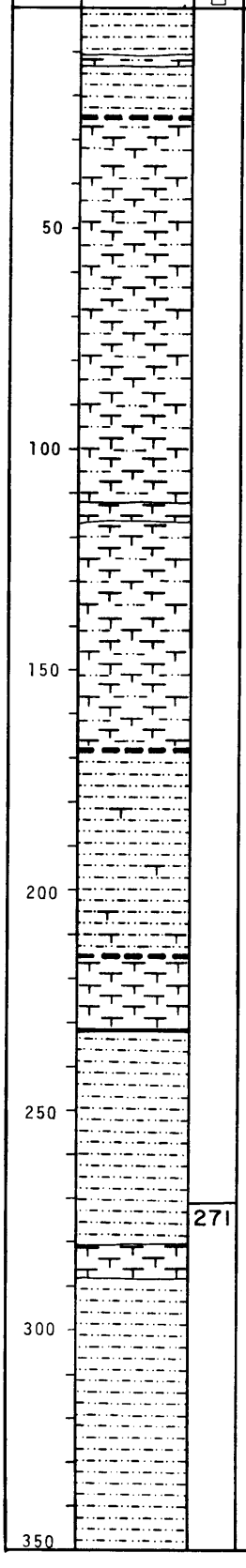
smear slide:	836 cm
Quartz and Feldspar	18
Mica	2
Heavy minerals	4
Clay	70
Micro-Mn nodules	1
Carbonate unspecified	<1
Foraminifera	5

Bottom topography: flat, on thick sediment cover.

NOTE: Disturbed sediment is due to bent pipe.
*Sediment between 167-169 cm and 899-924 cm is bagged.

Logged by: Kaharoeddin

ISLAS ORCADAS PC 1277-24



LATITUDE: 68°10.0′ S
LONGITUDE: 11°58.8′ E
CORR. DEPTH: 1862 M, 1018 FM
CORE LENGTH: 1180 CM

LITHOLOGIC DESCRIPTION

0-25 cm: Mud, light olive gray (5Y 5/2); increasing foraminifera content with depth; layer of marly, foraminiferal ooze between 11-13 cm; gradational contact.

smear slide:	18 cm
Quartz and Feldspar	30
Clay	63
Volcanic glass	2
Glauconite	<1
Carbonate unspecified	<1
Foraminifera	5
Diatoms	<1
Sponge spicules	<1

25-168 cm: Marly, foraminiferal ooze, light olive gray (5Y 5/2); layer of foraminiferal ooze between 113-117 cm; gradational contact.

smear slide:	115 cm
Quartz and Feldspar	15
Clay	20
Volcanic glass	5
Carbonate unspecified	10
Foraminifera	50
Diatoms	<1
Sponge spicules	<1

168-215 cm: Mud, light olive gray (5Y 5/2); increasing foraminifera content with depth; gradational contact.

smear slide:	187 cm
Quartz and Feldspar	25
Clay	67
Volcanic glass	3
Glauconite	1
Zeolite	1
Carbonate unspecified	2
Diatoms	1
Sponge spicules	<1

215-232 cm: Foraminiferal ooze, light olive gray (5Y 5/2); slightly washed along the side; sharp contact. NOTE: Smear slide is biased toward clay.

smear slide:	224 cm
Quartz and Feldspar	7
Clay	25
Volcanic glass	2
Glauconite	<1
Carbonate unspecified	12
Foraminifera	53
Diatoms	<1
Sponge spicules	1

232-1180 cm: Mud, light olive gray (5Y 5/2); layers of foraminiferal ooze between 282-288 cm, 354-357 cm, 429-431 cm, 495-498 cm, 512-515 cm and 519-522 cm; slightly washed along the side between 232-325 cm; gradational change to flow-in at 561 cm; (see next page for smear slide description).

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Logged by: Kaharoeddin, MacKenzie, Graves, Hattner, Goldstein, Eggers

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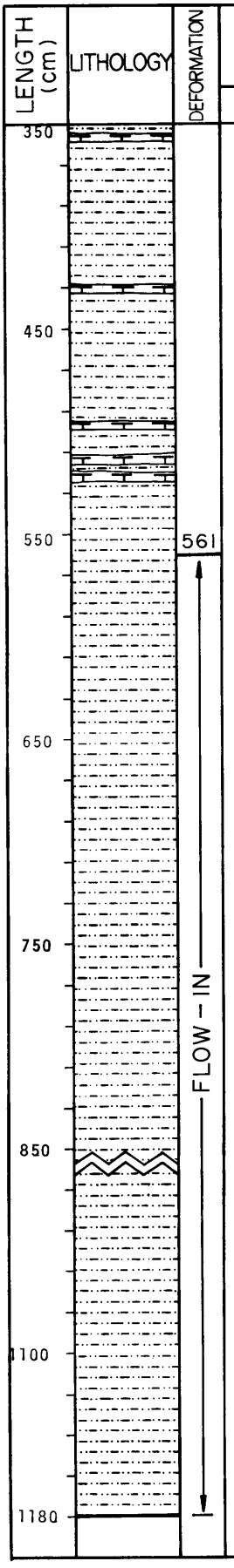


LATITUDE: 68°10.0′ S
LONGITUDE: 11°58.8′ E
CORR. DEPTH: 1862 M, 1018 FM
CORE LENGTH: 1180 CM

LITHOLOGIC DESCRIPTION

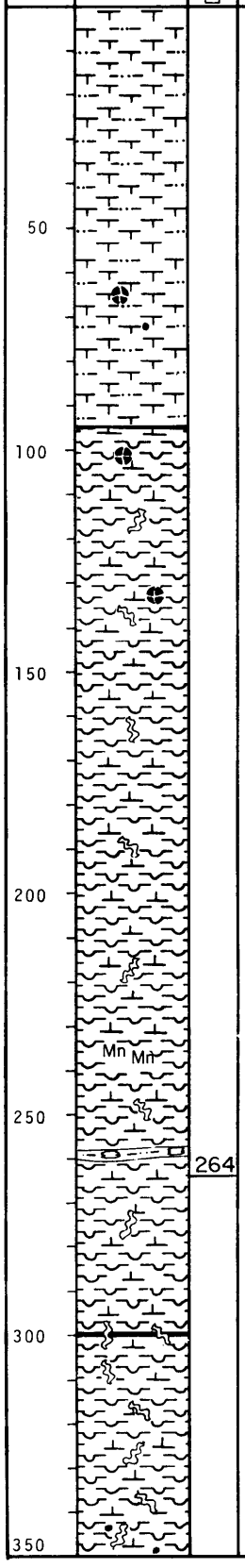
CONTINUED

smear slides:	236 cm	257 cm	325.cm	449 cm	506 cm
Quartz and Feldspar	30	27	15	10	10
Clay	55	67	71	85	75
Volcanic glass	5	<1	3	2	3
Glauconite	-	<<1	-	<1	<1
Micro-Mn nodules	<1	-	-	-	-
Zeolite	5	-	-	-	-
Carbonate unspecified	2	2	2	1	7
Foraminifera	1	4	8	2	5
Diatoms	1	<1	1	-	<1
Sponge spicules	1	<<1	<1	<1	<1

Bottom topography: not recorded.

Logged by: Kaharoeddin, MacKenzie, Graves, Hattner, Goldstein, Eggers

ISLAS ORCADAS PC 1277-25



LATITUDE: 68°36.5' S CORR. DEPTH: 2015 M, 1102 FM

LONGITUDE: 10°57.9' E CORE LENGTH: 1172 CM

LITHOLOGIC DESCRIPTION

0-95 cm: Marly, foraminiferal ooze, olive gray (5Y 4/1); 2 cm sedimentary clast between 65-67 cm, composed of clay, soft; 1 cm pebble between 74-75 cm; sharp contact. NOTE: Smear slide is slightly biased toward clay.

smear slide:	31 cm
Quartz and Feldspar	16
Heavy minerals	<1
Clay	50
Volcanic glass	2
Micro-Mn nodules	<1
Carbonate unspecified	5
Foraminifera	25
Diatoms	2
Radiolarians	<1
Sponge spicules	<<1

95-300 cm: Nannofossil, diatomaceous ooze, yellowish gray (5Y 7/2); nannofossil content decreasing with depth; lamina of marly, calcareous ooze between 257-258 cm; sedimentary clasts between 100-104 cm (3.5 cm) and 132-135 cm (3 cm), composed of marly, calcareous ooze, soft; stringers rich in micromanganese nodules between 235-239 cm; slightly bioturbated throughout; sharp, bioturbated contact.

smear slides:	116 cm	166 cm	216 cm	266 cm
Quartz and Feldspar	3	3	7	5
Mica	<1	<<1	<1	<1
Heavy minerals	2	1	3	2
Clay	5	2	5	8
Volcanic glass	-	-	<<1	-
Foraminifera	<1	-	-	-
Calcareous nannos	40	37	30	20
Diatoms	48	55	54	63
Radiolarians	2	2	1	2
Sponge spicules	<<1	<<1	<<1	<1
Silicoflagellates	<<1	<<1	<1	<<1

300-360 cm: Nannofossil-diatomaceous ooze, yellowish gray (5Y 7/2); 3 mm very fine pebbles between 343-344 cm and 347-348 cm; highly bioturbated throughout; gradational contact.

smear slides:	315 cm	356 cm
Quartz and Feldspar	2	5
Mica	<1	1
Heavy minerals	1	2
Clay	12	12
Volcanic glass	<<1	1
Foraminifera	<1	-
Calcareous nannos	36	35
Diatoms	48	42
Radiolarians	1	2
Sponge spicules	<<1	<<1
Silicoflagellates	<1	<1

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Logged by: Kaharoeddin, Eggers, Graves, Goldstein, Jones

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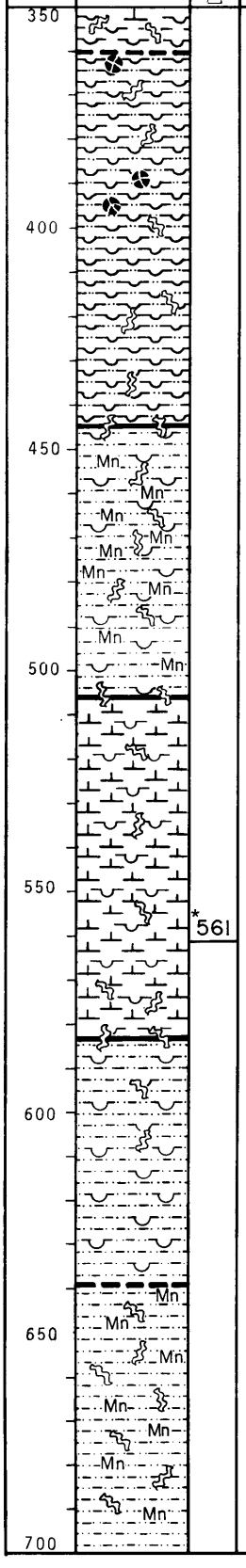

LATITUDE: 68°36,5′ S CORR. DEPTH: 2015 M, 1102 FM

LONGITUDE: 10°57,9′ E CORE LENGTH: 1172 CM

LITHOLOGIC DESCRIPTION

CONTINUED

360-445 cm: Muddy, diatomaceous ooze, yellowish gray (5Y 7/2); sedimentary clast between 361-363 cm (2 cm), 387-389 cm (1.5 cm) and 394-396 cm (2 cm), composed of nannofossil, diatomaceous ooze, yellowish gray (5Y 7/2), soft; highly bioturbated between 360-372 cm and between 415-445 cm; slightly bioturbated between 372-415 cm; sharp, bioturbated contact.

smear slides:	374 cm	440 cm		374 cm	440 cm
Quartz and Feldspar	7	8	Foraminifera	-	<<1
Mica	1	<<1	Calcareous nannos	10	12
Heavy minerals	2	1	Diatoms	50	45
Clay	29	33	Radiolarians	1	1
Volcanic glass	<1	<<1	Sponge spicules	<<1	-
			Silicoflagellates	<<1	<<1

445-506 cm: Diatomaceous mud, light olive gray (5Y 5/2); micro-manganese nodules common throughout; more abundant in bioturbations between 459-488 cm; moderately bioturbated between 459-488 cm and 502-506 cm; sharp, bioturbated contact.

smear slides:	446 cm	464 cm		446 cm	464 cm
Quartz and Feldspar	7	7	Micro-Mn nodules	<<1	<1
Mica	-	<1	Carbonate unspecified	<1	2
Heavy minerals	1	2	Calcareous nannos	7	5
Clay	55	64	Diatoms	30	20
Volcanic glass	<<1	-	Radiolarians	<1	<1
			Silicoflagellates	<<1	<<1

506-583 cm: Diatomaceous, nannofossil ooze, yellowish gray (5Y 7/2); micro-manganese nodules sparsely scattered throughout; stringers rich in micro-manganese nodules between 570-572 cm, 531-532 cm and 544-546 cm; stringers at the edge of bioturbation rich in micro-manganese nodules between 568-570 cm and 579-580 cm; highly bioturbated between 570-583 cm; moderately bioturbated between 506-570 cm; sharp, bioturbated contact.

smear slides:	544 cm	565 cm		544 cm	565 cm
Quartz and Feldspar	1	8	Foraminifera	-	<1
Mica	<1	1	Calcareous nannos	45	40
Heavy minerals	2	3	Diatoms	35	25
Clay	15	22	Radiolarians	1	1
Volcanic glass	1	<1	Sponge spicules	-	<1
			Silicoflagellates	<<1	<<1

583-639 cm: Diatomaceous mud, light olive gray (5Y 5/2); small patches, slightly stained with manganese oxides, and containing micro-manganese nodules sparsely scattered throughout; moderately bioturbated between 583-610 cm; gradational contact.

smear slides:	596 cm	626 cm		596 cm	626 cm
Quartz and Feldspar	3	12	Carbonate unspecified	-	<1
Mica	1	-	Calcareous nannos	7	<1
Heavy minerals	2	1	Diatoms	37	40
Clay	50	45	Radiolarians	<1	<1
Volcanic glass	<1	2	Sponge spicules	-	<1
Micro-Mn nodules	<1	-	Silicoflagellates	<<1	-

639-726 cm: Mud, light olive gray (5Y 5/2); patches highly stained with manganese oxides and often containing micro-manganese nodules, abundant between 639-686 cm, common between 686-726 cm; highly bioturbated; gradational contact.

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Logged by: Kaharoeddin, Eggers, Graves, Goldstein, Jones

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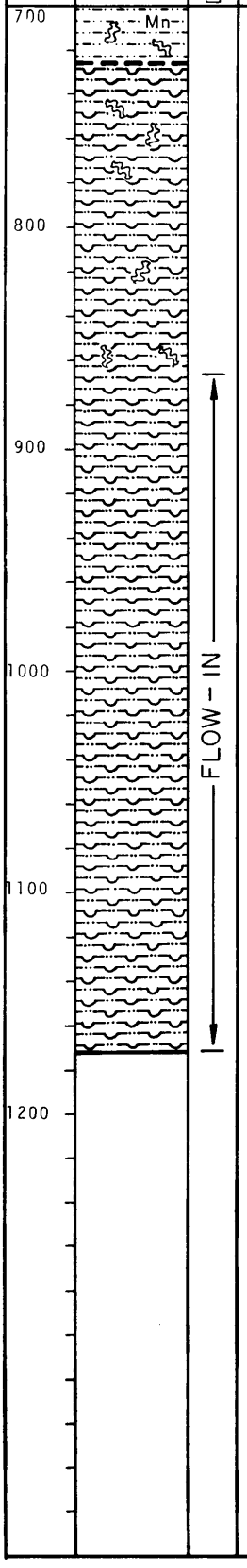


LATITUDE: 68°36,5′ S
LONGITUDE: 10°57,9′ E
CORR. DEPTH: 2015 M, 1102 FM
CORE LENGTH: 1172 CM

LITHOLOGIC DESCRIPTION

CONTINUED

smear slides:	646 cm	669 cm		646 cm	669 cm
Quartz and Feldspar	10	10	Micro-Mn nodules	<<1	-
Mica	<1	-	Diatoms	12	10
Heavy minerals	1	<1	Radiolarians	<1	-
Clay	78	80	Sponge spicules	<<1	<<1
Volcanic glass	<<1	<1	Silicoflagellates	<<1	-

726-1172 cm: Muddy, diatomaceous ooze, yellowish gray (5Y 7/2); zone of increasing nannofossil content between 760-770 cm; highly bioturbated between 740-780 cm, and 856-862 cm; slightly bioturbated between 780-856 cm; gradational change to flow-in at 866 cm.

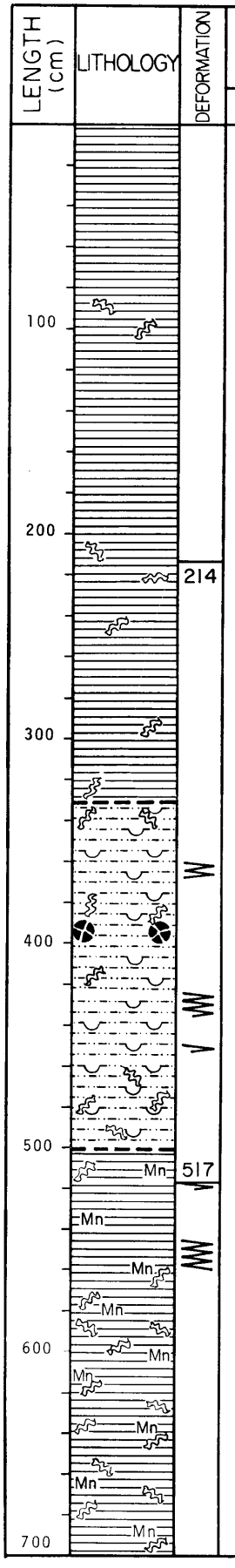
smear slides:	754 cm	814 cm
Quartz and Feldspar	15	4
Mica	<1	-
Heavy minerals	3	1
Clay	32	35
Volcanic glass	<1	<1
Micro-Mn nodules	<<1	-
Calcareous nannos	10	12
Diatoms	40	48
Radiolarians	<1	<<1
Silicoflagellates	<<1	<<1

Bottom topography: not recorded.

*NOTE: Sediment between 560-561 cm is bagged.

Logged by: Kaharoeddin, Eggers, Graves, Goldstein, Jones

ISLAS ORCADAS PC 1277-26



LATITUDE: 65°01.6' S CORR. DEPTH: 4658 M, 2547 FM

LONGITUDE: 09°11.0' E CORE LENGTH: 1732 CM

LITHOLOGIC DESCRIPTION

0-332 cm: Pelagic clay, yellowish gray (5Y 7/2); several stringers of clay between 12-26 cm; micro-manganese nodules sparsely scattered between 0-332 cm; slightly bioturbated between 80-110 cm, 210-225 cm, 240-250 cm, 290-300 cm and 320-332 cm; gradational contact.

smear slides:	27 cm	60 cm	100 cm	140 cm	198 cm	240 cm
Quartz and Feldspar	25	30	30	25	30	25
Mica	2	<1	1	1	1	2
Heavy minerals	2	4	3	3	3	3
Clay	34	36	42	36	32	54
Volcanic glass	<1	1	<1	1	2	<1
Diatoms	31	25	20	27	19	15
Radiolarians	5	4	3	5	10	1
Sponge spicules	1	<1	1	2	2	<1
Silicoflagellates	<1	<<1	<<1	<1	1	<1

332-501 cm: Diatomaceous mud, light olive gray (5Y 5/2); color change to yellowish gray (5Y 7/2) coincides with decrease in clay content between 344-370 cm, 400-410 cm, 440-470 cm and 496-501 cm; two 2 cm sedimentary clasts between 393-395 cm, both partially compacted, composed primarily of silt-size quartz particles; micro-manganese nodules sparsely scattered throughout; slightly bioturbated between 373-400 cm, 410-420 cm, 460-470 cm; moderately bioturbated between 332-345 cm, 470-501 cm; highly disturbed (watery) between 360-369 cm, 424-436 cm, 449-453 cm; gradational contact.

smear slides:	334 cm	414 cm	470 cm
Quartz and Feldspar	17	40	20
Mica	-	1	-
Heavy minerals	2	4	2
Clay	44	21	50
Volcanic glass	2	4	2
Micro-Mn nodules	<1	<1	<1
Diatoms	35	30	25
Radiolarians	<<1	<1	1
Sponge spicules	<1	<<1	<<1
Silicoflagellates	<1	<1	<1

501-979 cm: Pelagic clay, yellowish gray (5Y 7/2); micro-manganese nodules abundant throughout with high concentration between 880-896 cm; slightly bioturbated between 505-518 cm, 561-580 cm, 616-635 cm, 670-710 cm, 801-821 cm; moderately bioturbated between 583-616 cm, 635-670 cm, 850-880 cm, 930-958 cm, 970-979 cm; moderately disturbed (watery) between 518-521 cm; highly disturbed (watery) between 545-560 cm; gradational contact.

smear slides:	505 cm	534 cm	608 cm	793 cm	864 cm
Quartz and Feldspar	15	8	10	7	6
Mica	<1	1	<1	-	-
Heavy minerals	3	3	2	2	2
Clay	74	75	56	61	73
Volcanic glass	1	<1	1	1	<1
Micro-Mn nodules	-	1	-	<1	-
Diatoms	7	10	28	25	15
Radiolarians	<1	1	<1	3	3
Sponge spicules	<1	1	1	1	1
Silicoflagellates	<1	<1	2	<1	<<1

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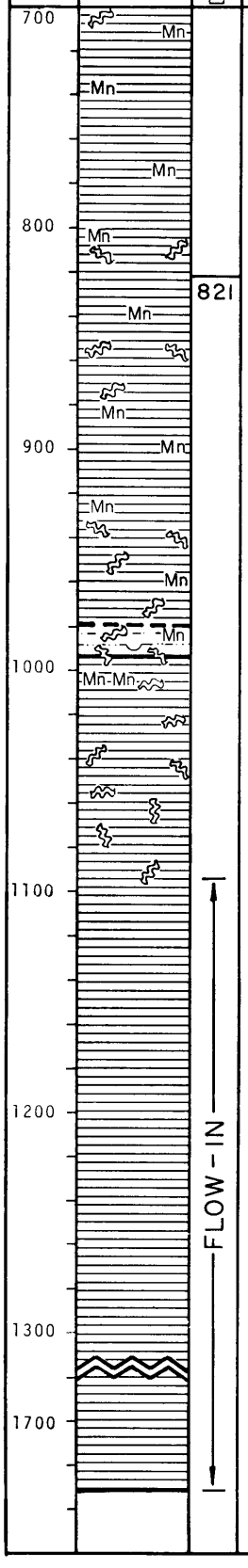
Logged by: Eggers, Kaharoeddin, Graves, Goldstein

ISLAS ORCADAS PC 1277-26



LATITUDE: 65°01.6′ S
LONGITUDE: 09°11.0′ E
CORR. DEPTH: 4658 M, 2547 FM
CORE LENGTH: 1732 CM

LITHOLOGIC DESCRIPTION

CONTINUED

979-994 cm: Diatomaceous mud, light olive gray (5Y 5/2); layer between 983-984 cm composed of silt-size quartz particles, contains concentration of micro-manganese nodules; highly bioturbated; sharp, bioturbated contact.

smear slide:	990 cm
Quartz and Feldspar	30
Mica	<1
Heavy minerals	5
Clay	32
Volcanic glass	1
Diatoms	30
Radiolarians	1
Sponge spicules	1
Silicoflagellates	<1

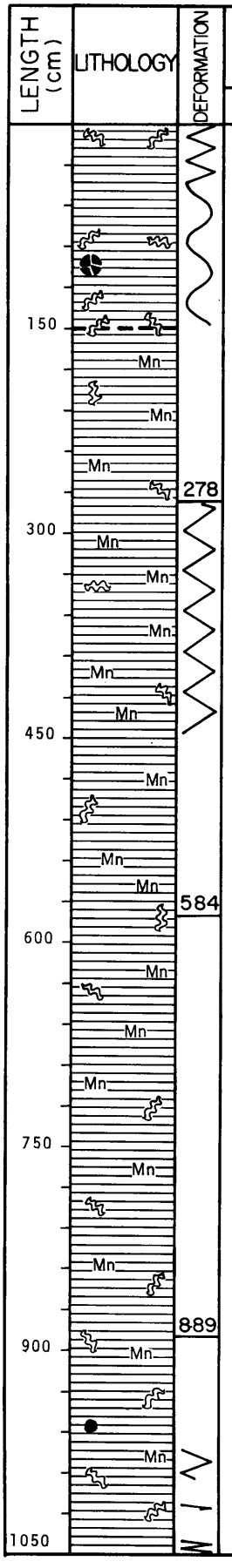
994-1732 cm: Pelagic clay, yellowish gray (5Y 7/2); micro-manganese nodules sparsely scattered throughout with concentration between 1002-1005 cm; slightly bioturbated between 994-1000 cm, 1016-1030 cm and 1070-1094 cm; moderately bioturbated between 1052-1065 cm; gradational change to flow-in at 1094 cm.

smear slide:	1089 cm
Quartz and Feldspar	8
Mica	<1
Heavy minerals	2
Clay	75
Volcanic glass	<1
Diatoms	15
Radiolarians	<1
Sponge spicules	<1
Silicoflagellates	<<1

Bottom topography: not recorded.

Logged by: Eggers, Kaharoeddin, Graves, Goldstein

ISLAS ORCADAS PC 1277-27



LATITUDE: 62°56.0′ S CORR. DEPTH: 4846 M, 2650 FM

LONGITUDE: 09°07.7′ E CORE LENGTH: 1806 CM

LITHOLOGIC DESCRIPTION

0-150 cm: Pelagic clay, dark yellowish brown (10 YR 4/2); unit contains higher percentage of diatoms than the underlying unit; 2 cm sedimentary clast between 107-109 cm, composed of clay, soft; unit is slightly stained with manganese oxides; moderately bioturbated between 0-15 cm, 93-98 cm and 136-150 cm; moderately disturbed between 0-45 cm; slightly disturbed between 45-147 cm; gradational, bioturbated contact.

smear slides:	20 cm	127 cm
Quartz and Feldspar	35	30
Mica	-	<1
Heavy minerals	4	3
Clay	30	39
Volcanic glass	2	1
Micro-Mn nodules	1	<1
Diatoms	26	25
Radiolarians	2	2
Sponge spicules	<1	<1
Silicoflagellates	<1	<<1

150-1747 cm: Pelagic clay, dark yellowish brown (10 YR 4/2), gradationally changing to light olive gray (5Y 5/2) between 587-596 cm, 653-674 cm, 910-957 cm, 1329-1354 cm, 1550-1656 cm; zone of decreased clay content between 653-674 cm; zone of increased diatom content 1329-1354 cm; 7 mm metamorphic gravel between 956-957 cm; few 1 mm patches composed of volcanic ash between 1472-1473 cm; unit is slightly stained with manganese oxides, micro-manganese nodules common throughout; concentrations of micro-manganese nodules in irregular stringers between 822-889 cm, 916-928 cm, 1144-1159 cm, 1262-1298 cm, and 1609-1616 cm; unit is slightly bioturbated throughout; moderately disturbed between 279-445 cm, 973-994 cm, 1014-1017 cm, 1040-1087 cm, 1164-1171 cm; gradational contact.

smear slides:	190 cm	351 cm	485 cm	656 cm	827 cm	928
Quartz and Feldspar	15	17	10	35	20	15
Mica	1	1	1	2	2	1
Heavy minerals	4	3	2	6	5	4
Clay	75	78	86	54	70	79
Volcanic glass	<1	<1	<1	<1	1	<1
Micro-Mn nodules	1	<1	<1	<1	<1	<1
Diatoms	4	1	1	3	2	1
Radiolarians	<1	-	-	<<1	<<1	-
Sponge spicules	<1	<1	<1	<1	<1	<<1
Silicoflagellates	-	-	-	<<1	-	-

	1085 cm	1250 cm	1345 cm	1454 cm	1607 cm	1667 cm
Quartz and Feldspar	18	8	15	12	25	8
Mica	2	1	<1	1	2	1
Heavy minerals	5	2	3	3	3	<1
Clay	63	81	57	70	47	63
Volcanic glass	<1	<1	<1	4	<1	1
Micro-Mn nodules	<1	<<1	<1	<1	<1	1
Diatoms	12	8	25	10	20	20
Radiolarians	<1	-	<<1	<1	3	4
Sponge spicules	<<1	<1	<1	<1	<1	1
Silicoflagellates	<<1	<<1	<1	-	<1	1

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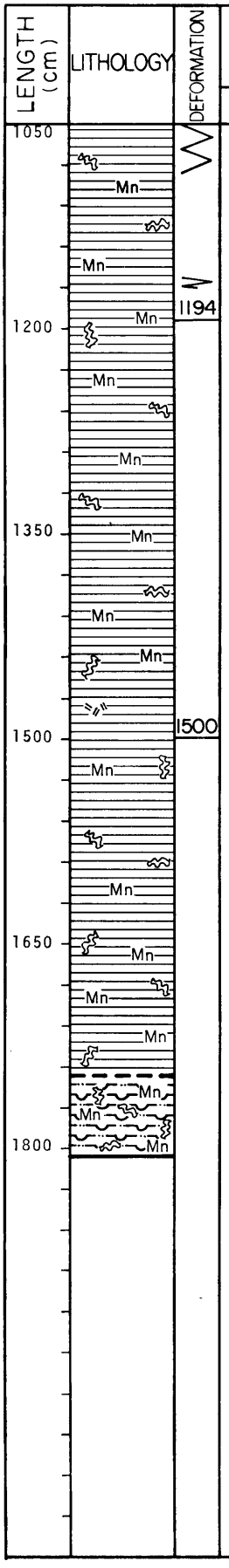
Logged by: Eggers, Kaharoeddin, Graves, Goldstein

ISLAS ORCADAS PC 1277-27



LATITUDE: 62°56.0′ S
LONGITUDE: 09°07.7′ E
CORR. DEPTH: 4846 M, 2650 FM
CORE LENGTH: 1806 CM

LITHOLOGIC DESCRIPTION

CONTINUED

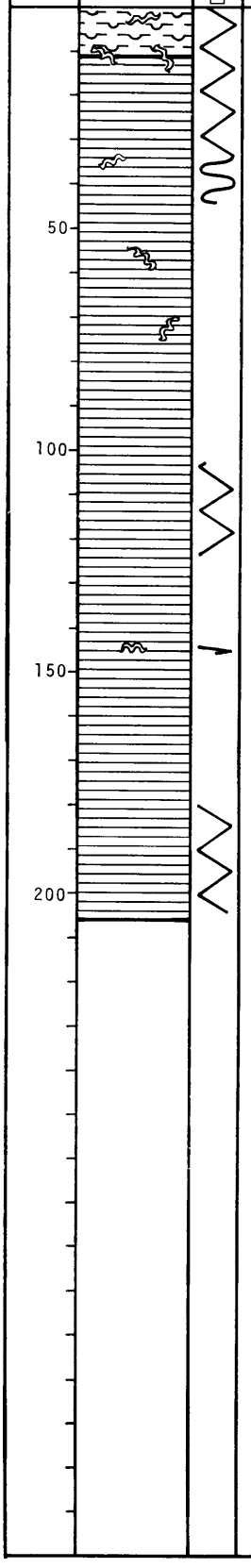
1747-1806 cm: Muddy, diatomaceous ooze, light olive gray (5Y 5/2); micro-manganese nodules common throughout in irregularly-shaped concentrations; irregular stringers composed of volcanic ash between 1768-1769 cm; unit is moderately bioturbated.

smear slide:	1802 cm
Quartz and Feldspar	15
Mica	<1
Heavy minerals	2
Clay	26
Volcanic glass	<1
Micro-Mn nodules	1
Diatoms	50
Radiolarians	6
Sponge spicules	<1
Silicoflagellates	<1

Bottom topography: not recorded (soft bottom).

Logged by: Eggers, Kaharoeddin, Graves, Goldstein

ISLAS ORCADAS PC 1277-28



LATITUDE: 61°28.0′ S
LONGITUDE: 09°11.0′ E
CORR. DEPTH: 5322 M, 2910 FM
CORE LENGTH: 206 CM

LITHOLOGIC DESCRIPTION

0-11 cm: Diatomaceous ooze, dark yellowish brown (10YR 4/2), moderately bioturbated throughout; highly disturbed (washed) throughout; sharp, bioturbated contact.

smear slide:	5 cm
Quartz and Feldspar	10
Heavy minerals	1
Clay	11
Volcanic glass	2
Diatoms	72
Radiolarians	4
Sponge spicules	<1
Silicoflagellates	<<1

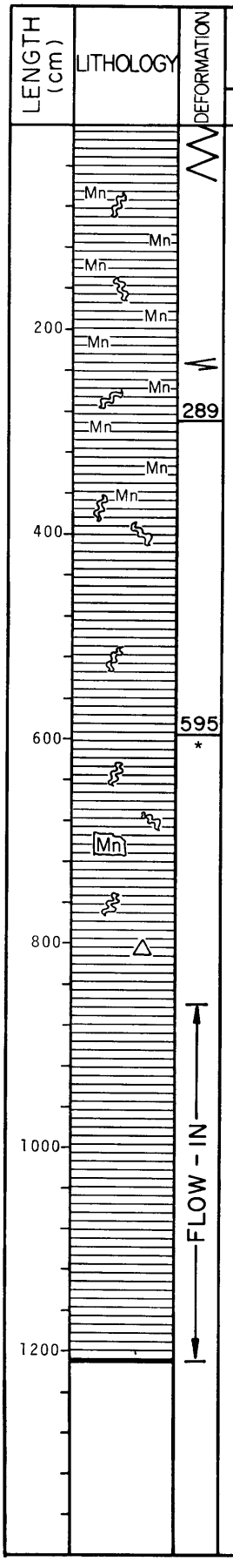
11-206 cm: Pelagic clay, dark yellowish brown (10YR 4/2) becoming moderate yellowish brown (10YR 5/4) at 144 cm; zone of relatively high diatom content between 11-100 cm, with the highest content of diatoms being in the top half of the zone; slightly bioturbated between 35-36 cm, 54-59 cm, 70-74 cm, and 144-145 cm; highly disturbed (washed) between 11-33 cm, 103-124 cm, 145-146 cm, and 180-204 cm; slightly disturbed (washed) between 33-44 cm.

smear slides:	15 cm	61 cm	101 cm	134 cm	197 cm
Quartz and Feldspar	15	5	5	8	10
Mica	<1	-	<<1	-	-
Heavy minerals	3	<1	<1	-	2
Clay	45	65	81	65	83
Volcanic glass	1	2	1	3	3
Micro-Mn nodules	<1	<1	<1	1	-
Zeolite	-	-	<<1	-	-
Diatoms	35	25	12	21	2
Radiolarians	<1	3	1	2	<1
Sponge spicules	<1	<1	<1	<1	-
Silicoflagellates	1	-	-	<<1	<<1

Bottom topography: not recorded.

Logged by: Graves, Jones, Eggers, Goldstein, Kaharoeddin

ISLAS ORCADAS PC 1277-29



LATITUDE: 59°31.4 S
LONGITUDE: 09°00.0' E
CORR. DEPTH: 4976 M, 2721 FM
CORE LENGTH: 1211 CM

LITHOLOGIC DESCRIPTION

0-1211 cm: Pelagic clay, light olive gray (5Y 5/2), gradationally changing at 400 cm to dark yellowish brown (10YR 4/2), gradationally changing at 520 cm to moderate brown (5YR 3/4); abundant micro-manganese nodules between 50-390 cm, sparsely scattered between 620-859 cm; clay of different composition, moderate yellowish brown (10YR 5/4), in 4 cm layer between 835-839 cm, in lamina convex upward between 786-788 cm, and in several laminae between 806-811 cm; 1 cm manganese nodule between 704-705 cm; 4 cm welded tuff between 792-801 cm, broken, slightly encrusted with manganese oxides; moderately bioturbated between 360-400 cm and 620-780 cm; slightly bioturbated between 50-360 cm and 400-620 cm; highly disturbed (washed) between 0-55 cm and 227-238 cm; abrupt change to flow-in at 859 cm.

smear slides:	49 cm	197 cm	358 cm	438 cm	583 cm
Quartz and Feldspar	4	5	5	3	3
Mica	<1	<1	<<1	<1	1
Heavy minerals	2	1	2	1	1
Clay	93	94	90	95	94
Volcanic glass	1	<1	1	1	1
Zeolite	-	-	2	<1	-
Diatoms	-	-	<<1	<<1	-

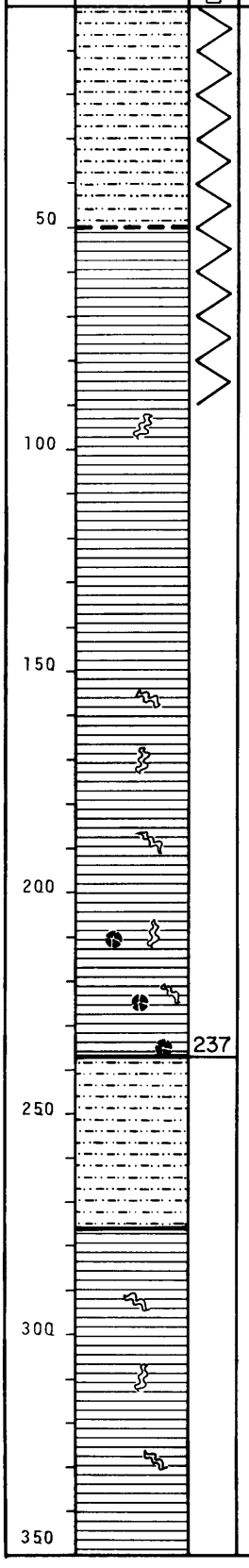
	678 cm	761 cm	831 cm	851 cm
Quartz and Feldspar	2	2	3	5
Mica	<<1	<<1	1	<1
Heavy minerals	<1	1	1	1
Clay	97	97	94	93
Volcanic glass	<1	<1	1	1
Micro-Mn nodules	<1	-	-	<1
Zeolite	1	<1	-	-
Diatoms	<<1	-	<<1	-

Bottom topography: not recorded.

*NOTE: Sediment between 595-600 cm is bagged.

Logged by: Kaharoeddin, MacKenzie, Hattner, Goldstein, Eggers

ISLAS ORCADAS PC 1277-30



LATITUDE: 60°01.2′ S
LONGITUDE: 06°07.4′ E
CORR. DEPTH: 5229 M, 2859 FM
CORE LENGTH: 1712 CM

LITHOLOGIC DESCRIPTION

0-50 cm: Mud, light olive gray (5Y 5/2); unit is highly disturbed (washed, watery); gradational contact.

smear slide:	30 cm
Quartz and Feldspar	15
Mica	<1
Heavy minerals	3
Clay	79
Volcanic glass	1
Zeolite	<1
Diatoms	2
Sponge spicules	<<1
Silicoflagellates	<1

50-237 cm: Pelagic clay, dark yellowish brown (10 YR 4/2); unit is slightly stained with manganese oxides; micro-manganese nodules sparsely scattered throughout; zone with increased diatom content between 180-198 cm and 205-218 cm; laminae of clay of different composition between 204-205 cm and 213-215 cm; 1 cm sedimentary clast between 210-211 cm, composed of diatomaceous ooze, soft; sedimentary clast between 226-227 cm (5 mm thick, 2 cm long) and 235-236 cm (1 cm), composed of fine silt-size quartz particles rich in volcanic ash, soft; slightly bioturbated between 90-96 cm and 150-220 cm; highly disturbed between 50-90 cm; sharp contact (coincides with end of core section).

smear slides:	113 cm	165 cm	192 cm
Quartz and Feldspar	10	14	7
Mica	<1	1	<1
Heavy minerals	2	2	2
Clay	85	82	46
Volcanic glass	1	1	10
Zeolite	<1	-	-
Diatoms	2	-	30
Radiolarians	-	-	5
Sponge spicules	-	<<1	<1
Silicoflagellates	-	-	<<1

237-276 cm: Mud, light olive gray (5Y 5/2); micro-manganese sparsely scattered throughout; sharp contact.

smear slides:	245 cm	275 cm
Quartz and Feldspar	35	15
Mica	1	<1
Heavy minerals	4	4
Clay	46	75
Volcanic glass	1	1
Micro-Mn nodules	6	-
Diatoms	7	5
Radiolarians	-	<<1
Sponge spicules	<<1	<<1
Silicoflagellates	-	<<1

276-440 cm: Pelagic clay, yellowish gray (5Y 7/2), gradationally changing at 292 cm to dark yellowish brown (10 YR 4/2); unit is slightly stained with manganese oxides; micro-manganese nodules sparsely scattered throughout; slightly bioturbated between 289-336 cm and 379-412 cm; moderately bioturbated between 368-379 cm and 412-440 cm; highly disturbed between 387-390 cm; gradational, bioturbated contact.

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Logged by: Kaharoeddin, Eggers, Graves, Goldstein

ISLAS ORCADAS PC 1277-30

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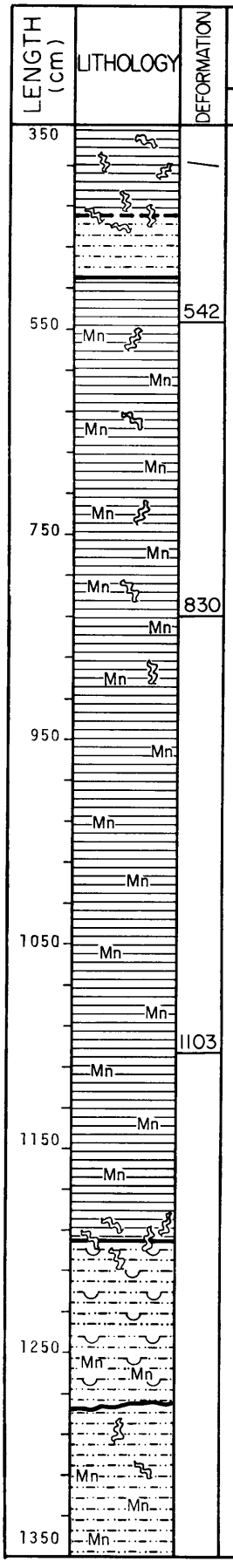

(SC)

LATITUDE: 60°01.2′ S
LONGITUDE: 06°07.4′ E
CORR. DEPTH: 5229 M, 2859 FM
CORE LENGTH: 1712 CM

LITHOLOGIC DESCRIPTION

CONTINUED

smear slides:	281 cm	325 cm
Quartz and Feldspar	10	6
Mica	<1	<<1
Heavy minerals	2	2
Clay	86	89
Volcanic glass	1	1
Micro-Mn nodules	-	<1
Zeolite	-	<1
Diatoms	1	2
Sponge spicules	-	<<1
Silicoflagellates	-	<<1

440-502 cm: Mud, light olive gray (5Y 5/2); micro-manganese nodules sparsely scattered throughout; horizontal, irregular stringer between 455-456 cm and vertical irregular stringer between 492-495 cm, rich in micro-manganese nodules; moderately bioturbated between 440-454 cm; sharp contact.

smear slides:	454 cm	496 cm
Quartz and Feldspar	15	15
Mica	<1	<1
Heavy minerals	5	2
Clay	73	78
Volcanic glass	<1	-
Zeolite	<1	-
Diatoms	7	5
Sponge spicules	<<1	<<1
Silicoflagellates	-	<<1

502-1195 cm: Pelagic clay, yellowish gray (5Y 7/2), gradationally changing at 523 cm to dark yellowish brown (10 YR 4/2), gradationally changing at 540 cm to dusky yellow (5Y 6/4); micro-manganese nodules common throughout; small patches highly stained with manganese oxides common between 502-921 cm, sparsely scattered between 921-1195 cm; zone of increased diatom content between 513-520 cm; slightly bioturbated between 502-906 cm; moderately bioturbated between 1190-1195 cm; sharp, bioturbated contact.

smear slides:	515 cm	669 cm	815 cm	933 cm	1132 cm
Quartz and Feldspar	15	6	5	8	8
Mica	<<1	<<1	<<1	<<1	-
Heavy minerals	3	4	4	4	3
Clay	69	85	89	85	86
Volcanic glass	2	1	1	1	1
Micro-Mn nodules	<1	4	1	2	<1
Zeolite	-	<1	<1	<1	-
Diatoms	10	<1	-	<1	2
Radiolarians	1	-	-	-	<<1
Sponge spicules	<<1	-	-	-	<1
Silicoflagellates	<<1	-	-	-	-

1195-1279 cm: Diatomaceous mud, light olive gray (5Y 5/2); micro-manganese nodules sparsely scattered between 1195-1254 cm, common between 1254-1279 cm; moderately bioturbated between 1195-1206 cm; sharp, inclined, wavy contact between 1277-1279 cm.

smear slides:	1225 cm	1270 cm
Quartz and Feldspar	22	25
Mica	-	<1
Heavy minerals	3	2
Clay	46	53
Volcanic glass	<1	1
Micro-Mn nodules	1	1
Diatoms	28	18
Radiolarians	<<1	<1
Sponge spicules	<<1	<<1
Silicoflagellates	<<1	<<1

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Logged by: Kaharoeddin, Eggers, Graves, Goldstein

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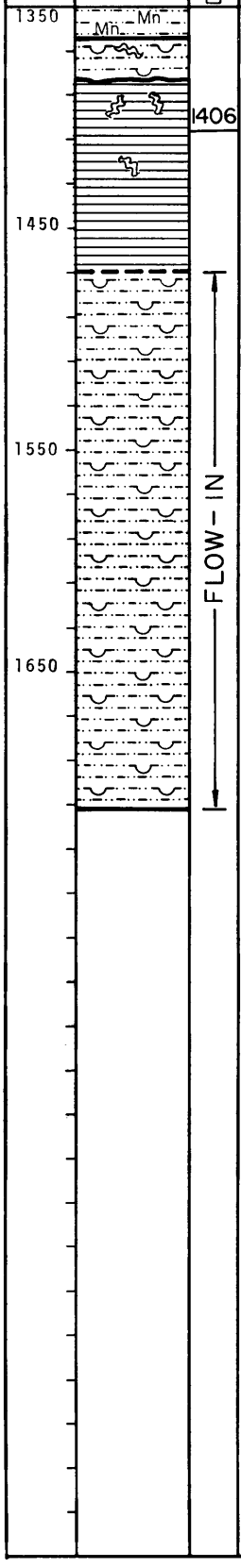


LATITUDE: 60°01.2′ S CORR. DEPTH: 5229 M, 2859 FM

LONGITUDE: 06°07.4′ E CORE LENGTH: 1712 CM

LITHOLOGIC DESCRIPTION

CONTINUED

1279-1364 cm: Mud, yellowish gray (5Y 7/2); micro-manganese nodules sparsely scattered between 1279-1307 cm, common between 1307-1364 cm; slightly bioturbated between 1279-1317 cm; sharp contact.

smear slides:	1290 cm	1310 cm
Quartz and Feldspar	15	12
Mica	<1	<1
Heavy minerals	4	2
Clay	74	77
Volcanic glass	1	<1
Micro-Mn nodules	<1	1
Diatoms	6	8
Radiolarians	<<1	<1
Sponge spicules	<<1	-
Silicoflagellates	<<1	-

1364-1383 cm: Diatomaceous mud, light olive gray (5Y 5/2); micro-manganese nodules sparsely scattered throughout; slightly bioturbated between 1364-1370 cm; sharp, wavy contact.

smear slide:	1375 cm
Quartz and Feldspar	28
Mica	1
Heavy minerals	5
Clay	33
Volcanic glass	1
Micro-Mn nodules	2
Diatoms	30
Radiolarians	<<1
Sponge spicules	<<1
Silicoflagellates	<1

1383-1469 cm: Pelagic clay, yellowish gray (5Y 7/2); micro-manganese nodules sparsely scattered throughout; moderately bioturbated between 1390-1400 cm, slightly bioturbated between 1400-1440 cm; gradational contact.

smear slide:	1414 cm
Quartz and Feldspar	5
Heavy minerals	2
Clay	85
Volcanic glass	1
Micro-Mn nodules	2
Zeolite	<1
Diatoms	5
Radiolarians	<1
Sponge spicules	<<1

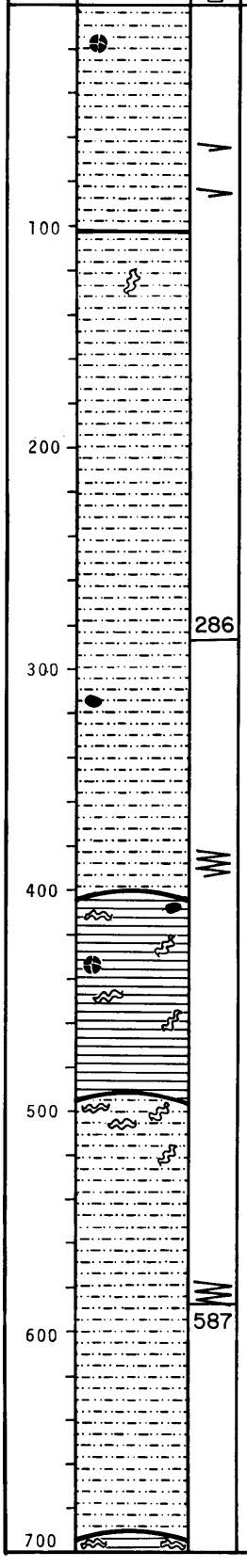
1469-1712 cm: Diatomaceous mud, light olive gray (5Y 5/2), with pelagic clay between 1469-1470 cm and along the sides between 1469-1509 cm; the entire unit is flow-in.

smear slide:	1603 cm
Quartz and Feldspar	4
Heavy minerals	2
Clay	57
Volcanic glass	2
Micro-Mn nodules	<1
Diatoms	35
Silicoflagellates	<1

Bottom topography: not recorded.

Logged by: Kaharoeddin, Eggers, Graves, Goldstein

ISLAS ORCADAS PC 1277-31



LATITUDE: 62°01.6′ S
LONGITUDE: 04°09.5′ E
CORR. DEPTH: 5240 M, 2865 FM
CORE LENGTH: 1791 CM

LITHOLOGIC DESCRIPTION

0-102 cm: Mud, light olive gray (5Y 5/2), becoming moderate olive brown (5Y 4/4) between 8-10 cm; silt and diatom content increases with depth; micro-manganese nodules sparsely scattered between 70-120 cm; 5 mm sedimentary clast between 17-18 cm, composed of pelagic clay, soft; moderately washed along the side between 14-17 cm, 51-64 cm, and 80-85 cm; moderately disturbed (watery) between 62-65 cm, 83-86 cm; sharp contact.

smear slides:	13 cm	99 cm		13 cm	99 cm
Quartz and Feldspar	9	20	Volcanic glass	2	2
Mica	-	<1	Micro-Mn nodules	<1	<1
Heavy minerals	2	5	Diatoms	2	10
Clay	85	63	Sponge spicules	<<1	<1
			Silicoflagellates	-	<<1

102-403 cm: Mud, moderate olive brown (5Y 4/4), gradationally changing at 113 cm to light olive gray (5Y 5/2); unit contains higher silt and diatom content than overlying unit; micro-manganese nodules sparsely scattered throughout; 8 mm pebble between 312-313 cm; slightly bioturbated between 118-125 cm; moderately disturbed (watery) between 382-393 cm; sharp contact, convexing upward.

smear slides:	106 cm	211 cm		106 cm	211 cm
Quartz and Feldspar	20	15	Micro-Mn nodules	<1	<1
Mica	<1	<1	Diatoms	8	10
Heavy minerals	3	5	Radiolarians	<1	<1
Clay	66	70	Sponge spicules	1	<1
Volcanic glass	2	<1	Silicoflagellates	-	<<1

403-493 cm: Pelagic clay, moderate olive brown (5Y 4/4); 5 mm lamina rich in silt-size particles between 403-405 cm, convexing upward along contact; 1 cm sedimentary clast between 433-434 cm, soft, composed of pelagic clay; 1 cm metamorphic pebble between 403-404 cm; slightly bioturbated between 411-457 cm; sharp contact, convexing slightly upward.

smear slide:	468 cm
Quartz and Feldspar	20
Heavy minerals	7
Clay	73
Volcanic glass	<1
Micro-Mn nodules	<1
Diatoms	<1

493-691 cm: Mud, moderate olive brown (5Y 4/4), abruptly changing to light olive gray (5Y 5/2) at 496 cm; micro-manganese nodules sparsely scattered throughout; 3 mm lamina rich in silt-size particles between 493-494 cm convexing upward along contact; slightly bioturbated between 507-515 cm; moderately bioturbated between 496-507 cm; slightly washed along the side between 537-578 cm; highly disturbed between 578-588 cm; sharp contact, convexing slightly upward.

smear slide:	608 cm		
Quartz and Feldspar	12	Micro-Mn nodules	<1
Mica	<1	Diatoms	7
Heavy minerals	4	Radiolarians	<<1
Clay	77	Sponge spicules	<1
Volcanic glass	<1	Silicoflagellates	<<1

691-709 cm: Pelagic clay, light olive gray (5Y 5/2), gradationally changing at 698 cm to moderate olive brown (5Y 4/4); 1 cm lamina between 691-692 cm rich in silt-size particles, convexing upward along contact; moderately bioturbated between 697-709 cm; gradational contact.

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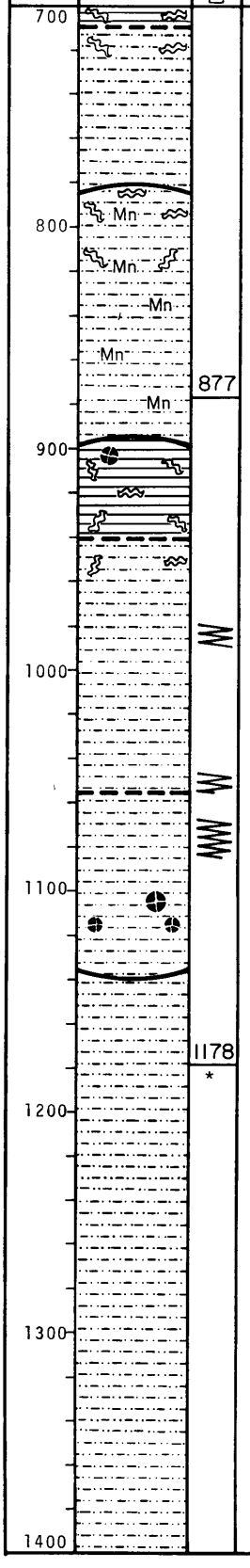

LATITUDE: 62°01.6′ S CORR. DEPTH: 5240 M, 2865 FM

LONGITUDE: 04°09.5′ E CORE LENGTH: 1791 CM

LITHOLOGIC DESCRIPTION

CONTINUED

smear slides:	692 cm	703 cm		692 cm	703 cm
Quartz and Feldspar	45	12	Volcanic glass	2	2
Mica	4	<1	Micro-Mn nodules	1	-
Heavy minerals	10	1	Diatoms	10	<1
Clay	15	85	Radiolarians	1	-
			Sponge spicules	12	-

709-785 cm: Mud, light olive gray (5Y 5/2); slightly bioturbated between 709-726 cm; sharp contact, convexing slightly upward.

smear slide:	778 cm		
Quartz and Feldspar	30	Volcanic glass	1
Mica	1	Micro-Mn nodules	<<1
Heavy minerals	4	Diatoms	2
Clay	62	Radiolarians	<<1
		Sponge spicules	<<1

785-899 cm: Mud, moderate olive brown (5Y 4/4) abruptly changing at 799 cm to light olive gray (5Y 5/2); increasing diatom content and decreasing clay content with depth; micro-manganese nodules common throughout; layer of pelagic clay between 789-799 cm; 2 cm layer between 789-791 cm, compacted, rich in volcanic ash, 2 mm lamina between 785-786 cm, convexing slightly upward along contact, both composed of silt-size particles; slightly bioturbated between 799-823 cm; moderately bioturbated between 785-799 cm; sharp contact, convexing slightly upward.

smear slides:	792 cm	804 cm	884 cm
Quartz and Feldspar	12	15	32
Mica	1	1	1
Heavy minerals	8	5	5
Clay	70	79	40
Volcanic glass	7	<1	<1
Micro-Mn nodules	<1	-	<<1
Diatoms	2	<<1	22
Radiolarians	-	-	<<1
Sponge spicules	<1	<<1	<<1
Silicoflagellates	-	-	<<1

899-941 cm: Pelagic clay, moderate olive brown (5Y 4/4); layer of mud between 906-909 cm, light olive gray (5Y 5/2), widening along the sides; 1 cm lamina between 899-900 cm, rich in silt-size particles, convexing slightly upward along contact; 5 mm sedimentary clast between 906-907 cm, composed of silt-size quartz particles; unit is moderately bioturbated; gradational contact.

smear slides:	904 cm	908 cm	916 cm
Quartz and Feldspar	8	25	18
Mica	<1	<1	1
Heavy minerals	1	6	3
Clay	65	57	76
Volcanic glass	2	<1	2
Micro-Mn nodules	-	<1	<1
Diatoms	22	12	<1
Radiolarians	2	-	-
Sponge spicules	<1	<1	-
Silicoflagellates	<<1	<<1	-

941-1056 cm: Mud, light olive gray (5Y 5/2); micro-manganese nodules sparsely scattered throughout; 1 cm lamina between 1055-1056 cm, composed of silt-size particles; slightly bioturbated between 941-959 cm; slightly washed along the side between 941-966 cm; highly disturbed (watery) between 979-990 cm and 1046-1056 cm; gradational contact.

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Logged by: Eggers, Kaharoeddin, Graves, Jones

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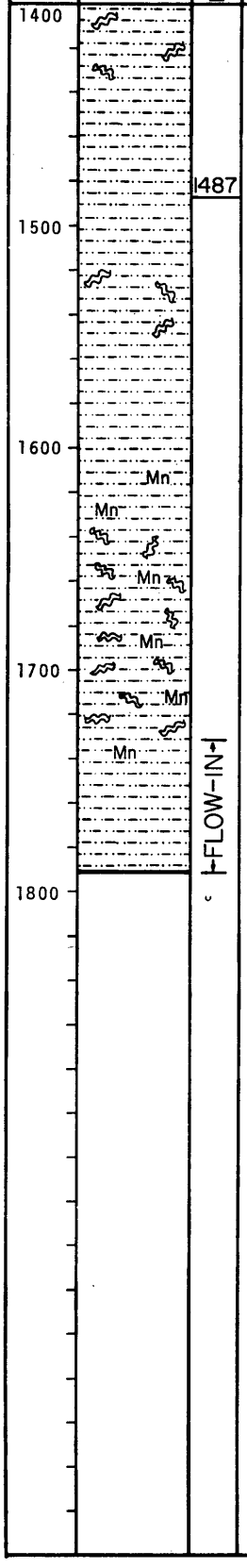


LATITUDE: 62°01.6′ S
LONGITUDE: 04°09.5′ E
CORR. DEPTH: 5240 M, 2865 FM
CORE LENGTH: 1791 CM

LITHOLOGIC DESCRIPTION

CONTINUED

smear slide:	1038 cm
Quartz and Feldspar	40
Mica	2
Heavy minerals	10
Clay	44
Volcanic glass	2
Diatoms	2
Sponge spicules	<1

1056-1136 cm: Mud, moderate olive brown (5Y 4/4), gradationally changing at 1128 cm to dusky yellow (5Y 6/4); two 1 cm sedimentary clasts between 1117-1118 cm and 1119-1120 cm; thin sedimentary clast between 1106-1112 cm, elongated due to dragging in during coring operation, all clasts composed of silt-size particles; moderately washed along the sides between 1056-1067 cm; highly disturbed between 1067-1085 cm; sharp contact, convexing downward.

smear slides:	1091 cm	1130 cm
Quartz and Feldspar	10	12
Mica	<1	1
Heavy minerals	2	2
Clay	78	80
Volcanic glass	2	3
Micro-Mn nodules	-	<1
Diatoms	8	2
Sponge spicules	<1	<<1
Silicoflagellates	<<1	<1

1136-1791 cm: Mud, light olive gray (5Y 5/2), becoming moderate olive brown (5Y 4/4) between 1145-1155 cm, 1403-1406 cm, 1420-1428 cm and 1520-1525 cm; decreasing clay content and increasing silt and diatom content with depth; micro-manganese nodules sparsely scattered between 1136-1614 cm, common between 1614-1732 cm; 2 cm layer of clay between 1152-1154 cm, highly compacted, rich in volcanic ash; 2 mm lamina rich in micro-manganese nodules between 1394-1395 cm; zone rich in silt-size particles between 1515-1519 cm; slightly bioturbated between 1403-1438 cm, 1523-1545 cm, and 1703-1716 cm; highly bioturbated between 1636-1703 cm and 1716-1739 cm; abrupt change to flow-in at 1732 cm.

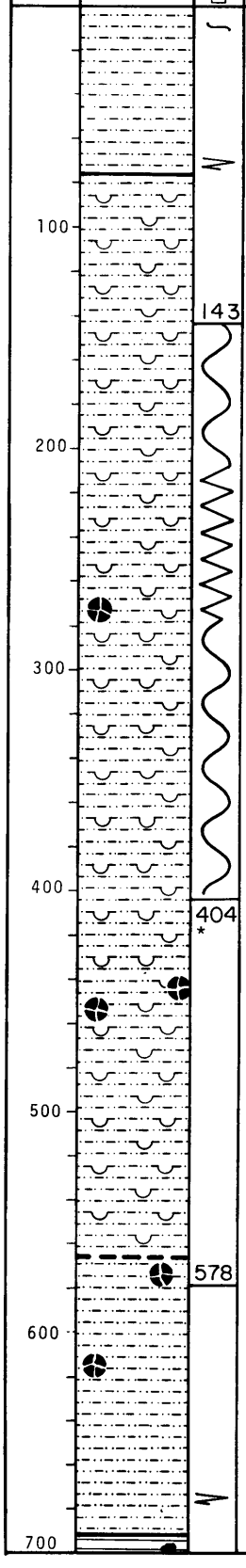
smear slides:	1194 cm	1448 cm	1532 cm	1724 cm
Quartz and Feldspar	17	10	15	20
Mica	<1	1	<1	1
Heavy minerals	2	3	3	3
Clay	70	65	62	47
Volcanic glass	1	1	<1	2
Micro-Mn nodules	-	-	<1	<1
Diatoms	10	20	20	27
Radiolarians	+	<<1	<<1	<<1
Sponge spicules	<<1	<1	-	<1
Silicoflagellates	<1	<1	<1	<1

Bottom topography: not recorded.

*NOTE: sediment between 1178-1182 cm is bagged.

Logged by: Eggers, Kaharoeddin, Graves, Jones

ISLAS ORCADAS PC 1277-32



LATITUDE: 63°00.4′ S
LONGITUDE: 03°06.0′ E
CORR. DEPTH: 5227 M, 2858 FM
CORE LENGTH: 1755 CM

LITHOLOGIC DESCRIPTION

0-76 cm: Mud, light olive gray (5Y 5/2); micro-manganese nodules sparsely scattered throughout; 1 cm lamina rich in volcanic ash and micro-manganese nodules between 75-76 cm; slightly disturbed (watery) between 7-10 cm; highly disturbed (washed) between 68-74 cm; sharp contact.

smear slide:	34 cm
Quartz and Feldspar	20
Mica	<1
Heavy minerals	4
Clay	72
Volcanic glass	2
Zeolite	<1
Diatoms	2
Radiolarians	<<1
Sponge spicules	<1

76-566 cm: Diatomaceous mud, light olive gray (5Y 5/2); sedimentary clasts between 278-280 cm (2 cm) and 445-448 cm (3 cm), composed of silt-size quartz and volcanic ash particles, semi-indurated; 5 cm sedimentary clast between 450-455 cm, composed of silt-size quartz and volcanic ash particles, semi-indurated, angular, deposited at an angle; slightly disturbed between 144-207 cm and 277-402 cm; highly disturbed between 207-277 cm; gradational contact.

smear slides:	86 cm	333 cm	565 cm
Quartz and Feldspar	20	7	15
Heavy minerals	<1	<1	<1
Clay	48	57	53
Volcanic glass	2	1	1
Diatoms	30	35	30
Radiolarians	<<1	<<1	<<1
Sponge spicules	<<1	-	<1
Silicoflagellates	<<1	<<1	1

566-692 cm: Mud, light olive gray (5Y 5/2); 7 cm sedimentary clast between 566-573 cm, irregular in shape, cracked and broken, soft, composed of pelagic clay, moderate olive brown (5Y 4/4), stained with manganese oxides, containing micro-manganese nodules; cracks in clast filled by diatomaceous mud; 1 cm sedimentary clast between 617-618 cm, composed of silt-size quartz and volcanic ash particles, semi-indurated; 2 cm layer between 578-580 cm, composed of silt-size quartz and volcanic ash particles, semi-indurated; moderately disturbed (watery) between 672-677 cm; sharp contact.

smear slides:	572 cm	684 cm		572 cm	684 cm
Quartz and Feldspar	4	5	Volcanic glass	2	2
Mica	-	<1	Zeolite	1	-
Heavy minerals	<<1	2	Diatoms	<1	15
Clay	93	76	Radiolarians	-	<<1
			Silicoflagellates	-	<1

692-704 cm: Pelagic clay, moderate olive brown (5Y 4/4); 2 cm comglomerate between 692-694 cm, composed of coarse sand to fine pebble-size particles cemented with iron oxides; gradational contact.

smear slide:	697 cm
Quartz and Feldspar	12
Heavy minerals	<1
Clay	70
Volcanic glass	2
Micro-Mn nodules	<1
Diatoms	15
Radiolarians	1
Sponge spicules	<1
Silicoflagellates	<<1

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Logged by: Eggers, Kaharoeddin, Graves, Jones, Goldstein

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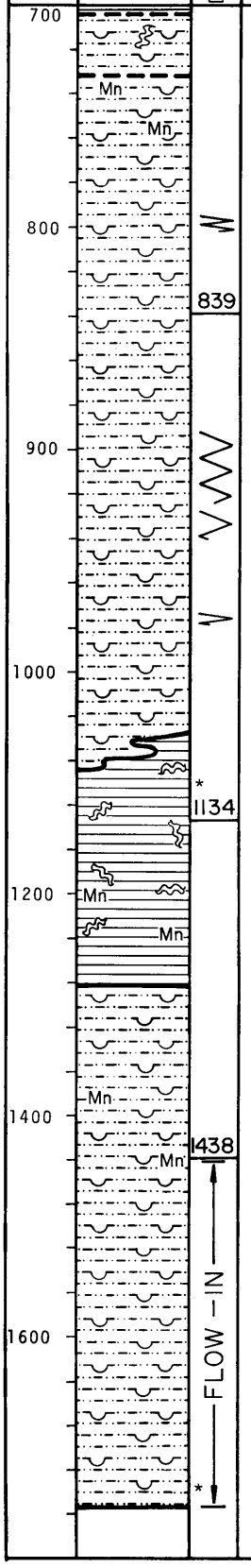


LATITUDE: 63°00.4' S
LONGITUDE: 03°06.0' E
CORR. DEPTH: 5227 M, 2858 FM
CORE LENGTH: 1755 CM

LITHOLOGIC DESCRIPTION

CONTINUED

704-731 cm: Diatomaceous mud, light olive gray (5Y 5/2); bioturbation between 711-712 cm; gradational contact.

smear slide:	705 cm
Quartz and Feldspar	10
Heavy minerals	1
Clay	72
Volcanic glass	2
Micro-Mn nodules	<1
Diatoms	15
Radiolarians	<1
Sponge spicules	<1
Silicoflagellates	<1

731-1073 cm: Diatomaceous mud, light olive gray (5Y 5/2); unit has higher diatom content and lower silt and clay content than the overlying unit; micro-manganese nodules common between 731-736 cm and 750-756 cm, stringers rich in micro-manganese nodules scattered throughout; highly disturbed (watery) between 795-802 cm, 892-925 cm, 927-940 cm and 973-978 cm; sharp, sinuous contact between 1060-1073 cm, filled primarily with silt-size quartz particles, looks like the bottom of a load cast, (erosional feature).

smear slides:	783 cm	880 cm	1054 cm
Quartz and Feldspar	20	17	17
Clay	34	43	35
Volcanic glass	1	<1	1
Micro-Mn nodules	<1	-	-
Diatoms	45	40	45
Radiolarians	<<1	-	2
Sponge spicules	<1	<1	<1
Silicoflagellates	<1	<1	<1

1073-1283 cm: Pelagic clay, dark yellowish brown (10YR 4/2); irregular patches rich in micro-manganese nodules between 1208-1209 cm and 1238-1239 cm; moderately bioturbated between 1073-1257 cm; sharp contact.

smear slide:	1274 cm
Quartz and Feldspar	25
Clay	59
Volcanic glass	1
Diatoms	15
Radiolarians	<1
Silicoflagellates	<1

1283-1755 cm: Diatomaceous mud, light olive gray (5Y 5/2); gradationally changing at 1291 cm to dark yellowish brown (10YR 4/2); aggregates of micro-manganese nodules and disseminanted manganese oxides between 1384-1385 cm and 1439-1441 cm; abrupt change to flow-in at 1441 cm.

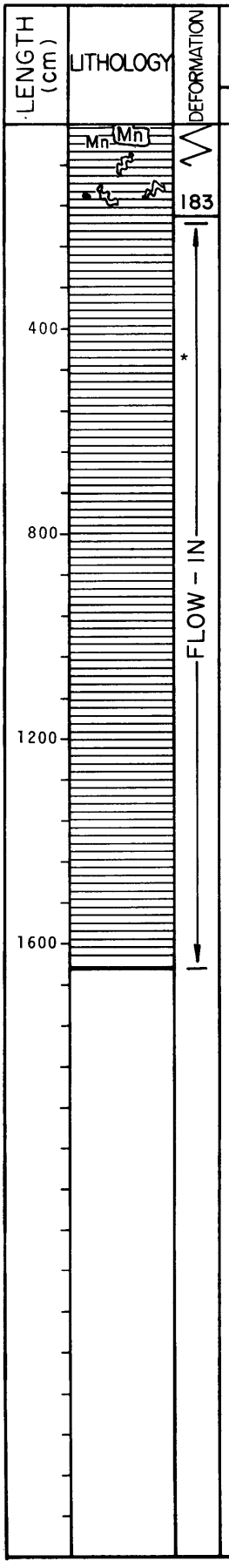
smear slides:	1287 cm	1360 cm	1450 cm
Quartz and Feldspar	12	20	17
Heavy minerals	-	<1	<1
Clay	60	47	34
Volcanic glass	<1	3	3
Micro-Mn nodules	-	<1	<1
Diatoms	27	30	45
Radiolarians	<<1	<1	-
Sponge spicules	<<1	<1	<1
Silicoflagellates	1	<1	1

Bottom topography: not recorded.

*NOTE: Sediment between 402-423 cm, 1128-1134 cm and 1750-1755 cm is bagged.

Logged by: Eggers, Kaharoeddin, Graves, Jones, Goldstein

ISLAS ORCADAS PC 1277-33



LATITUDE: 63°33.5′ S CORR. DEPTH: 4184 M, 2288 FM

LONGITUDE: 02°28.7′ E CORE LENGTH: 1650 CM

LITHOLOGIC DESCRIPTION

0-1650 cm: Pelagic clay, light olive gray (5Y 5/2), gradationally changing at 250 cm to dark yellowish brown (10YR 4/2); micro-manganese nodules and volcanic ash common between 8-80 cm; small patches stained with manganese oxides sparsely scattered between 135-170 cm; layer of clay, yellowish gray (5Y 7/2), along the side between 14-30 cm and in an inclined layer between 51-64 cm; both layers have been dragged up and disturbed due to implosion; horizontal laminae of clay, yellowish gray (5Y 7/2), between 171-172 cm and 179-180 cm; 3.5 cm manganese nodule between 1-5 cm; 3 cm elongated pebble between 157-160 cm, highly encrusted with manganese oxides; highly bioturbated between 138-165 cm, moderately bioturbated between 35-80 cm; highly disturbed between 0-3 cm, with pieces of liner embedded between 0-20 cm; moderately disturbed (dragged along the side of core liner) between 20-65 cm; slightly washed along the side between 0-100 cm; gradational change to flow-in at 186 cm.

smear slides:	6 cm	89 cm	178 cm
Quartz and Feldspar	8	12	7
Mica	<1	<1	2
Heavy minerals	1	3	3
Clay	83	84	88
Volcanic glass	1	<1	<1
Diatoms	2	<<1	-
Radiolarians	4	<1	<<1
Sponge spicules	1	1	<1

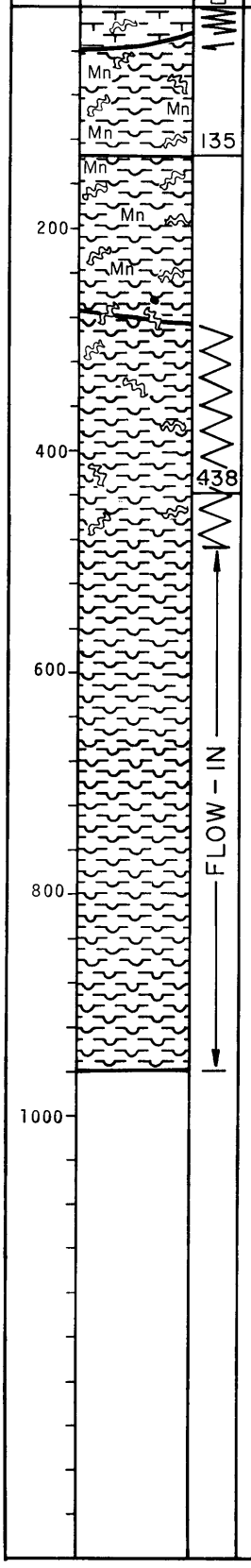
Bottom topography: not recorded.

NOTE: Fragments of core liner, and distorted sediment layers along liner wall in the top 65 cm are evidence of core liner implosion above the core top.

*Sediment between 465-475 cm is bagged.

Logged by: Kaharoeddin

ISLAS ORCADAS PC 1277-34



LATITUDE: 64°28.8′ S CORR. DEPTH: 2679 M, 1465 FM

LONGITUDE: 01°33.3′ E CORE LENGTH: 960 CM

LITHOLOGIC DESCRIPTION

0-38 cm: Foraminiferal ooze, very pale orange (10YR 8/2) changing abruptly at 21 cm to yellowish gray (5Y 7/2); micro-iron concretions abundant between 0-21 cm and sparsely scattered between 21-38 cm; concretions probably not formed in situ, but from contamination due to implosion; slightly bioturbated between 25-34 cm; highly disturbed between 0-21 cm and 34-38 cm due to implosion, piece of plastic liner imbedded between 10-21 cm and along contact between 34-38 cm; moderately disturbed (sediments mixed) between 21-26 cm, probably due to implosion; slightly washed along the side between 25-38 cm; sharp, inclined (disturbed) contact.

smear slides:	6 cm	30 cm		6 cm	30 cm
Quartz and Feldspar	<1	1	Foraminifera	97	60
Heavy minerals	<<1	<<1	Diatoms	2	13
Clay	<1	4	Radiolarians	<<1	<1
Carbonate unspecified	1	22	Sponge spicules	<<1	<1

38-135 cm: Diatomaceous ooze, dusky yellow (5Y 6/4); micro-manganese nodules common throughout; highly bioturbated throughout; moderately washed along the side between 38-80 cm; slightly washed along the side between 80-135 cm; sharp contact.

smear slides:	48 cm	107 cm		48 cm	107 cm
Quartz and Feldspar	1	1	Micro-Mn nodules	<<1	-
Heavy minerals	-	<<1	Diatoms	88	89
Clay	<1	<1	Radiolarians	6	8
Volcanic glass	2	<<1	Sponge spicules	-	<<1
			Silicoflagellates	3	2

135-281 cm: Diatomaceous ooze, yellowish gray (5Y 7/2); micro-manganese nodules common throughout; irregularly shaped diatom balls up to 3 cm, very pale orange (10YR 8/2), common throughout; 4 mm fine gravel between 276-277 cm; highly bioturbated throughout; sharp, inclined, bioturbated contact.

smear slide:	138 cm
Quartz and Feldspar	1
Clay	<1
Diatoms	88
Radiolarians	10
Sponge spicules	<<1
Silicoflagellates	1

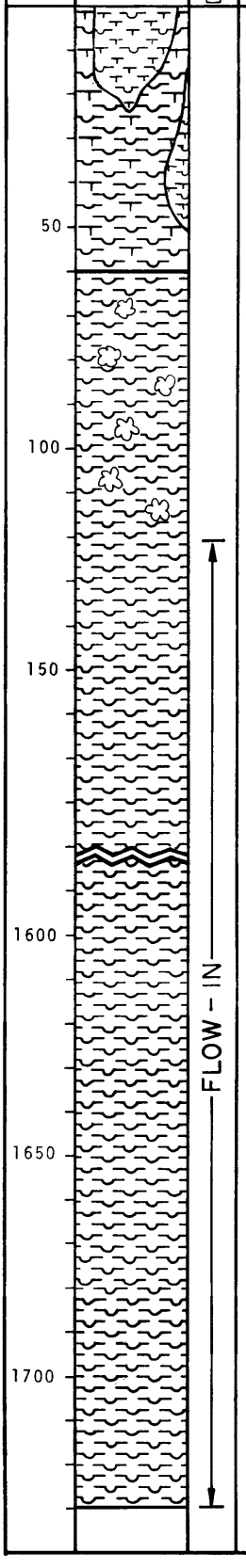
281-960 cm: Diatomaceous ooze, very pale orange (10YR 8/2) changing abruptly at 332 cm to white (N9), changing gradationally at 438 cm to very pale orange (10YR 8/2); moderately bioturbated between 281-488 cm; highly disturbed (washed) between 281-428 cm; moderately disturbed (washed) between 428-488 cm; gradational change to flow-in at 488 cm.

smear slides:	292 cm	330 cm	430 cm	443 cm
Quartz and Feldspar	1	2	1	1
Heavy minerals	-	-	<<1	<<1
Clay	<1	<1	<1	<1
Volcanic glass	-	-	-	<<1
Diatoms	94	87	94	96
Radiolarians	4	10	4	2
Sponge spicules	<<1	-	<<1	-
Silicoflagellates	1	1	1	1

Bottom topography: not recorded.

Logged by: Eggers, Graves, Kaharoeddin, Goldstein

ISLAS ORCADAS PC 1277-35



LATITUDE: 64°27.3' S
LONGITUDE: 01°46.7' E
CORR. DEPTH: 2527 M, 1382 FM
CORE LENGTH: 1730 CM

LITHOLOGIC DESCRIPTION

0-60 cm: Diatomaceous, foraminiferal ooze, yellowish gray (5Y 7/2) and foraminiferal, diatomaceous ooze, yellowish gray (5Y 7/2); moderately washed along the side of the liner, resulting in partial mixing of these two oozes; sharp contact.

smear slides:	8 cm	45 cm
Quartz and Feldspar	2	1
Clay	2	5
Carbonate unspecified	5	15
Foraminifera	15	60
Diatoms	68	17
Radiolarians	5	2
Sponge spicules	<1	<1
Silicoflagellates	3	-

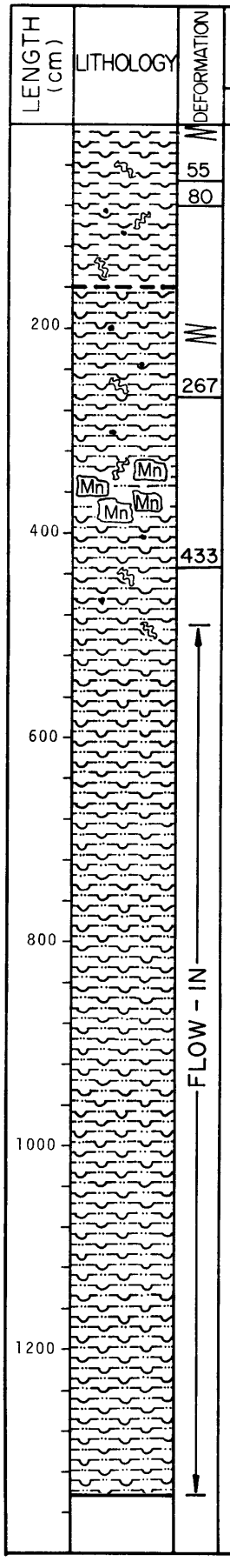
60-1730 cm: Diatomaceous ooze, yellowish gray (5Y 7/2); highly mottled with white diatom cotton; gradational change to flow-in at 120 cm.

smear slides:	62 cm	117 cm
Quartz and Feldspar	1	3
Clay	2	<1
Carbonate unspecified	<1	1
Foraminifera	-	2
Diatoms	92	82
Radiolarians	2	8
Silicoflagellates	3	4

Bottom topography: on top of the Maude Rise.

Logged by: Hattner, MacKenzie, Kaharoeddin

ISLAS ORCADAS PC 1277-36



LATITUDE: 65°32.1' S CORR. DEPTH: 3440 M, 1881 FM

LONGITUDE: 00°27.9' E CORE LENGTH: 1344 CM

LITHOLOGIC DESCRIPTION

0-160 cm: Diatomaceous ooze, dark yellowish brown (10YR 4/2); angular pebbles up to 5 mm sparsely scattered between 80-110 cm; slightly bioturbated throughout; highly disturbed by a 13 cm piece of core liner between 0-13 cm; slightly washed along the side between 45-65 cm and 124-160 cm; gradational contact.

smear slides:	3 cm	77 cm	117 cm	160 cm
Quartz and Feldspar	3	2	4	2
Heavy minerals	<1	<1	-	<1
Clay	12	15	15	25
Volcanic glass	<1	<1	<1	<1
Diatoms	73	68	71	68
Radiolarians	10	10	4	3
Sponge spicules	1	<1	<1	<1
Silicoflagellates	1	5	6	2

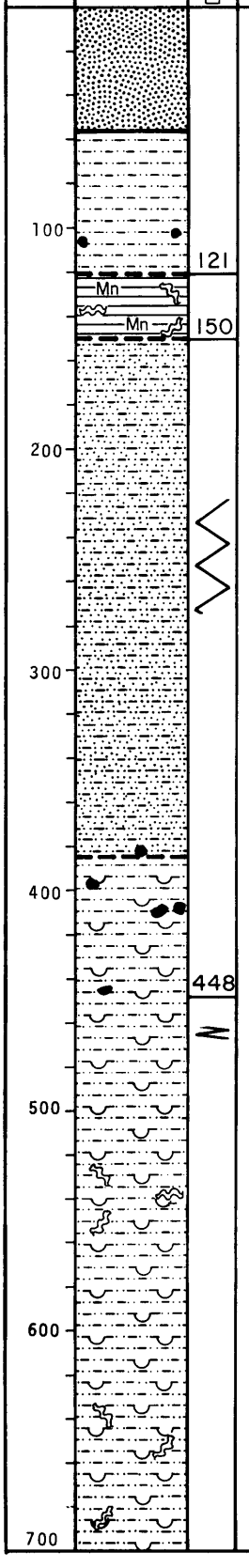
160-1344 cm: Muddy, diatomaceous ooze, dark yellowish brown (10YR 4/2); very fine pebbles coated with manganese oxides sparsely scattered throughout; 2 cm ellipsoid-shaped manganese crust between 393-395 cm; manganese nodules between 343-344 cm (2 mm), 373-374 cm (3 mm) and 390-391 cm (5 mm); slightly bioturbated between 258-260 cm, 300-340 cm and 435-495 cm; highly disturbed between 194-213 cm; slightly washed along the side between 160-194 cm, 213-267 cm and 310-313 cm; gradational change to flow-in at 495 cm.

smear slides:	264 cm	300 cm	480 cm
Quartz and Feldspar	8	10	2
Mica	-	<<1	-
Heavy minerals	1	<1	-
Clay	35	30	30
Volcanic glass	<1	<1	<1
Micro-Mn nodules	-	<<1	<1
Diatoms	52	58	62
Radiolarians	4	2	5
Sponge spicules	<1	<1	1
Silicoflagellates	<1	<<1	<<1

Bottom topography: not recorded.

Logged by: Graves, Hattner, Jones, Goldstein, Kaharoeddin

ISLAS ORCADAS PC 1277-37



LATITUDE: 66°30.5' S
LONGITUDE: 00°40.5' W
CORR. DEPTH: 4473 M, 2446 FM
CORE LENGTH: 1275 CM

LITHOLOGIC DESCRIPTION

0-56 cm: Sand, olive gray (5Y 4/1); becoming coarser with depth; moderately washed along the sides; sharp contact.

smear slides:	3 cm	34 cm
Quartz and Feldspar	50	64
Mica	2	2
Heavy minerals	18	18
Clay	20	7
Rock fragments	-	<1
Volcanic glass	4	3
Glauconite	2	5
Micro-Mn nodules	<1	<1
Diatoms	2	1
Radiolarians	2	<1
Sponge spicules	<1	<<1
Silicoflagellates	-	<<1

56-121 cm: Mud, dark yellowish brown (10YR 4/2); zone of sandy mud between 88-101 cm; 2 cm conglomerate between 106-108 cm, 7 mm conglomerate between 102-103 cm; both conglomerates are cemented and encrusted with manganese oxides; micro-manganese nodules sparsely scattered between 56-88 cm and 101-122 cm; slightly washed along the side between 65-122 cm; moderately washed along the side between 56-65 cm; gradational contact.

smear slides:	69 cm	94 cm
Quartz and Feldspar	45	42
Mica	1	1
Heavy minerals	5	7
Clay	46	47
Volcanic glass	2	2
Glauconite	<1	1
Micro-Mn nodules	1	<1
Diatoms	<1	-
Radiolarians	<<1	-
Sponge spicules	<1	<<1

121-150 cm: Pelagic clay, dark yellowish brown (10YR 4/2); micro-manganese nodules common throughout; slightly bioturbated throughout; unit is slightly washed along the side; gradational contact.

smear slide:	146 cm
Quartz and Feldspar	20
Mica	1
Heavy minerals	4
Clay	73
Volcanic glass	1
Glauconite	<<1
Micro-Mn nodules	1
Diatoms	<<1

150-385 cm: Sandy mud, moderate olive brown (5Y 4/4); zone of mud between 150-168 cm; zones of increased sand content between 222-254 cm, 294-308 cm and 370-385 cm; 1.5 cm pebble between 383-385 cm, partially coated with manganese oxides; slightly washed along the side between 150-172 cm and 298-385 cm; moderately disturbed (washed) between 253-274 cm; highly disturbed (washed) between 223-253 cm and 274-298 cm; gradational contact.

smear slides:	196 cm	234 cm	273 cm	297 cm	333 cm	376 cm
Quartz and Feldspar	45	60	40	72	34	55
Mica	3	1	<1	-	<1	<1
Heavy minerals	12	8	6	-	5	5
Clay	34	23	50	23	50	27
Volcanic glass	3	5	2	5	3	5
Glauconite	1	3	2	<1	1	3
Micro-Mn nodules	2	<1	<1	-	1	-
Carbonate unspecified	-	-	-	<1	-	-
Diatoms	-	<1	<1	-	3	1
Radiolarians	-	<1	<<1	-	3	3
Sponge spicules	<<1	<<1	-	-	<1	1
Silicoflagellates	-	<<1	-	-	<<1	<<1

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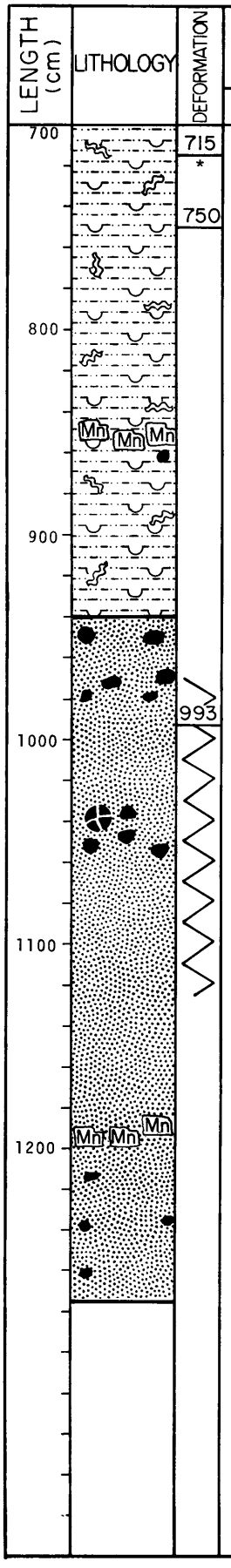
Logged by: Eggers, Graves, Goldstein, Kaharoeddin

ISLAS ORCADAS PC 1277-37



LATITUDE: 66°30.5′ S CORR. DEPTH: 4473 M, 2446 FM

LONGITUDE: 00°40.5′ W CORE LENGTH: 1275 CM

LITHOLOGIC DESCRIPTION

CONTINUED

385-940 cm: Diatomaceous mud, moderate olive brown (5Y 4/4); zones of increased sand content between 522-529 cm and 723-755 cm; micro-manganese nodules sparsely scattered throughout; manganese oxide staining between 636-670 cm, concentrated in irregular stringers; 1 cm pebble between 397-398 cm, two 3.5 cm pebbles between 404-408 cm, 8 mm pebble between 442-443 cm, 2.5 cm pebble between 855-858 cm; all pebbles are coated with manganese oxides; many manganese nodules, up to 3 cm, between 847-852 cm; slightly bioturbated between 528-552 cm and 636-940 cm; slightly washed along the sides between 640-656 cm; moderately washed along the side, resulting in abundance of coarse fractions of overlying unit along the side between 385-447 cm; moderately disturbed (watery) between 461-467 cm; sharp contact.

smear slides:	405 cm	556 cm	737 cm	843 cm
Quartz and Feldspar	20	15	30	15
Mica	<1	<1	<1	<1
Heavy minerals	3	1	4	4
Clay	53	59	27	47
Volcanic glass	1	1	2	2
Glauconite	<1	-	1	<1
Micro-Mn nodules	<1	<1	-	<1
Diatoms	17	20	30	27
Radiolarians	6	4	5	4
Sponge spicules	<1	<<1	1	<1
Silicoflagellates	<<1	<<1	<<1	1

940-1275 cm: Sand, olive gray (5Y 3/2); micro-manganese nodules sparsely scattered throughout; 4 cm sedimentary clast between 1033-1037 cm, composed of sandy mud, soft; abundant pebbles up to 3 cm between 945-980 cm and 1034-1056 cm; 1.5 cm pebble between 1213-1215 cm, 5 mm pebble between 1232-1233 cm, 1 cm pebble between 1234-1235 cm, 2 cm pebble between 1260-1262 cm, all pebbles are coated with manganese oxides; 1.5 cm manganese nodule between 1186-1188 cm; abundant manganese nodules up to 2.5 cm between 1194-1199 cm; moderately disturbed (washed) between 1114-1126 cm; highly disturbed (washed) between 970-984 cm and 992-1114 cm.

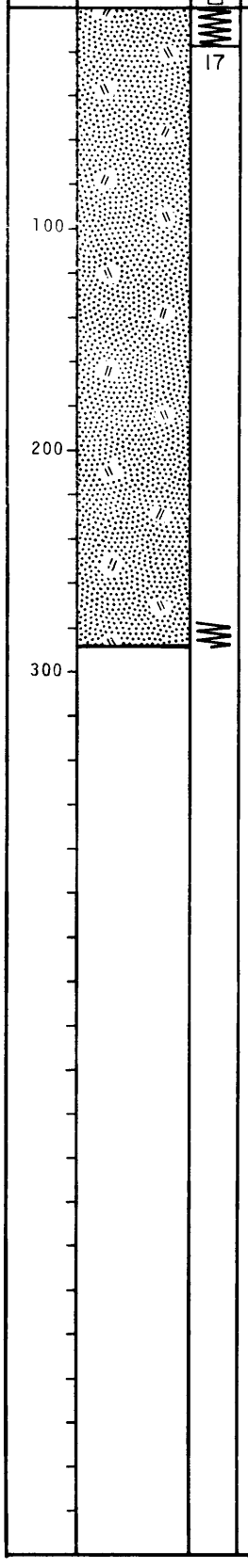
smear slide:	1147 cm
Quartz and Feldspar	74
Mica	2
Heavy minerals	6
Clay	5
Volcanic glass	6
Glauconite	6
Micro-Mn nodules	<1
Diatoms	1
Radiolarians	<<1
Sponge spicules	<1
Silicoflagellates	<<1

Bottom topography: not recorded.

*NOTE: Sediment between 715-718 cm is bagged.

Logged by: Eggers, Graves, Goldstein, Kaharoeddin

ISLAS ORCADAS PC 1277-39 B



LATITUDE: 68°29.9′ S
LONGITUDE: 03°05.7′ W
CORR. DEPTH: 4062 M, 2221 FM
CORE LENGTH: 288 CM

LITHOLOGIC DESCRIPTION

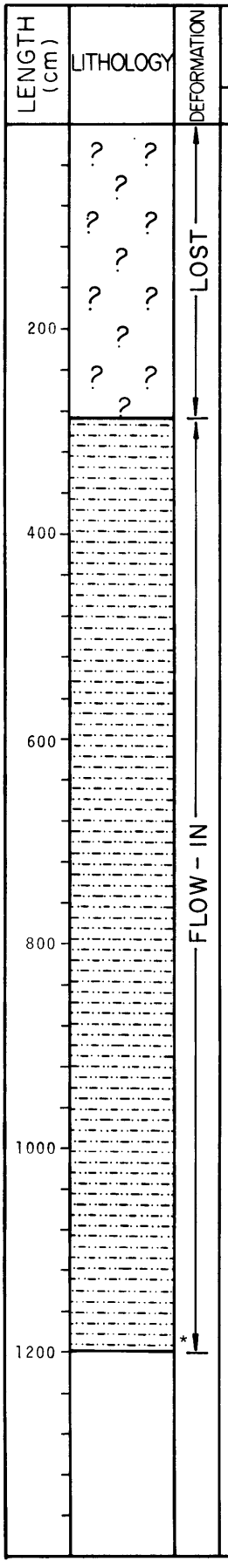
0-288 cm: Ash-bearing sand, olive gray (5Y 3/2); grading from very fine sand at the top of the core to coarse sand at the base; moderately disturbed (washed) between 0-17 cm and 278-288 cm; slightly washed along the side between 110-223 cm.

smear slides:	10 cm	98 cm
Quartz and Feldspar	76	79
Mica	1	-
Heavy minerals	20	10
Volcanic glass	2	10
Glauconite	1	1
Foraminifera	<1	-
Radiolarians	<<1	-
Sponge spicules	<<1	<1

Bottom topography: not recorded.

Logged by: Hattner, Graves, Eggers, Kaharoeddin

ISLAS ORCADAS PC 1277-40



LATITUDE: 69°29.6′ S
LONGITUDE: 04°19.7 W
CORR. DEPTH: 2970 M, 1624 FM
CORE LENGTH: 1200 CM

LITHOLOGIC DESCRIPTION

0-285 cm: This core section was lost during the unloading process aboard ship; presumed to have been a full liner.

285-1200 cm: Mud, grayish olive (10Y 4/2) and moderate olive brown (5Y 4/4); grayish olive mud to outside, with a slightly higher silt content; moderate olive brown mud to inside; flow-in between 285-1200 cm.

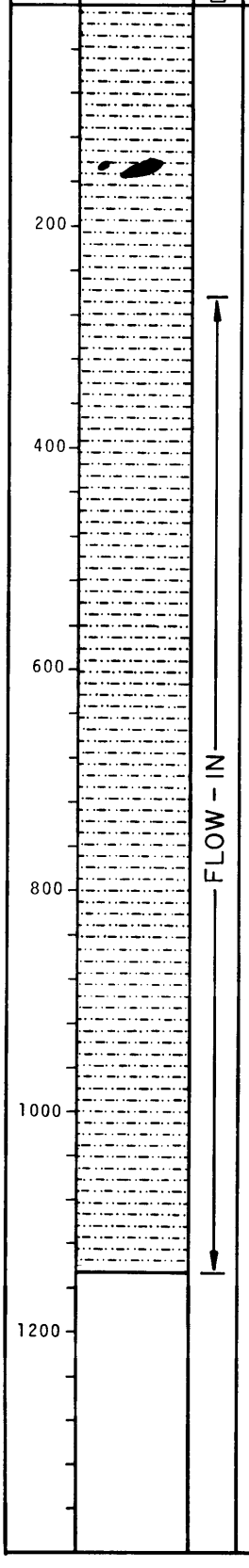
smear slides:	365 cm (inside)	365 cm (outside)
Quartz and Feldspar	30	34
Mica	<1	<1
Heavy minerals	4	5
Clay	66	61
Volcanic glass	<1	<1
Micro-Mn nodules	-	<1
Carbonate unspecified	<1	-

Bottom topography: not recorded.

*NOTE: Sediment between 1172-1200 cm is bagged.

Logged by: Graves, Hattner, Goldstein

ISLAS ORCADAS PC 1277-41



LATITUDE: 69°59.9′ S
LONGITUDE: 05°04.6′ W
CORR. DEPTH: 1873 M, 1024 FM
CORE LENGTH: 1173 CM

LITHOLOGIC DESCRIPTION

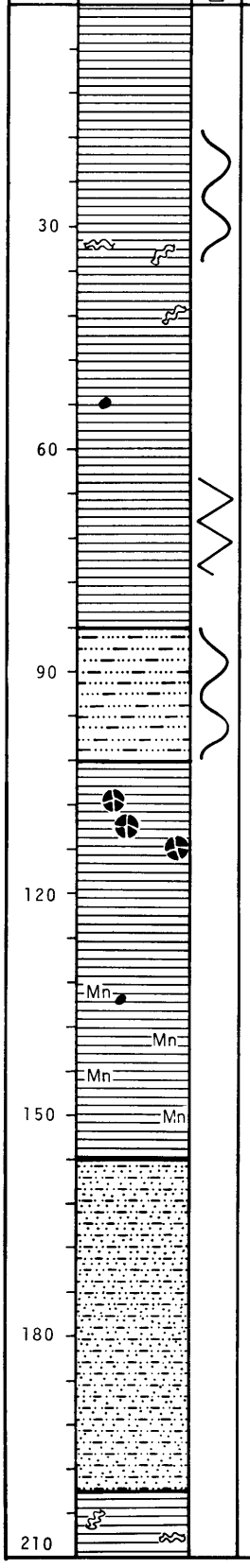
0-1173 cm: Mud, olive gray (5Y 3/2); volcanic ash content increasing with depth; angular 5 cm pebble between 153-158 cm; subangular 1 cm pebble between 149-150 cm; abrupt change to flow-in at 265 cm.

smear slides:	6 cm	23 cm	109 cm	171 cm	261 cm
Quartz and Feldspar	40	56	25	25	50
Heavy minerals	<1	1	-	2	2
Clay	50	35	64	63	33
Volcanic glass	4	5	8	8	12
Glauconite	-	1	2	<1	2
Carbonate unspecified	1	2	1	2	1
Foraminifera	-	-	<1	<1	-
Diatoms	5	<1	<<1	<1	<<1
Sponge spicules	<1	-	<<1	-	<1

Bottom topography: not recorded (soft bottom, close to the edge of ice).

Logged by: Kaharoeddin, MacKenzie, Hattner, Eggers, Goldstein

ISLAS ORCADAS PC 1277-42



LATITUDE: 66°00.3' S
LONGITUDE: 15°00.7' W
CORR. DEPTH: 4918 M, 2689 FM
CORE LENGTH: 337 CM

LITHOLOGIC DESCRIPTION

0-84 cm: Pelagic clay, dark yellowish brown (10YR 4/2); unit is slightly stained with manganese oxides; lamina of mud, between 46-47 cm, light olive gray (5Y 5/2); 5 mm angular, metamorphic pebble between 53-54 cm; slightly bioturbated between 30-43 cm; slightly disturbed (washed) between 17-35 cm; moderately disturbed (washed) between 64-77 cm; sharp contact.

smear slide:	9 cm
Quartz and Feldspar	36
Mica	<1
Heavy minerals	8
Clay	55
Volcanic glass	1
Micro-Mn nodules	<1

84-102 cm: Very fine silt, light olive gray (5Y 5/2); micro-manganese nodules sparsely scattered throughout; fine laminae rich in heavy minerals between 97-102 cm; slightly disturbed (washed) between 84-102 cm; sharp contact.

smear slide:	94 cm
Quartz and Feldspar	82
Mica	<1
Heavy minerals	15
Clay	<1
Volcanic glass	3

102-156 cm: Pelagic clay, moderate olive brown (5Y 4/4); micro-manganese nodules abundant between 132-156 cm; unit is slightly stained with manganese oxides; layer of medium silt between 128-132 cm, moderate olive brown (5Y 4/4); lamina of very fine silt between 125-127 cm; several 1 cm sedimentary clasts between 105-112 cm, composed of very fine silt; 3 mm pebble between 135-136 cm; slightly disturbed (washed) between 102-103 cm; sharp contact.

smear slide:	116 cm
Quartz and Feldspar	25
Mica	<1
Heavy minerals	5
Clay	69
Volcanic glass	1

156-201 cm: Sandy mud, grayish olive (10Y 4/2), becoming coarser with depth; increasing glauconite content with depth; sharp contact.

smear slide:	173 cm
Quartz and Feldspar	45
Mica	<1
Heavy minerals	4
Clay	51
Volcanic glass	<1
Glauconite	<1

201-236 cm: Pelagic clay, dark yellowish brown (10YR 4/2); unit is slightly stained with manganese oxides; slightly bioturbated throughout; moderately disturbed between 230-236 cm; slightly washed along the side between 201-230 cm; gradational contact.

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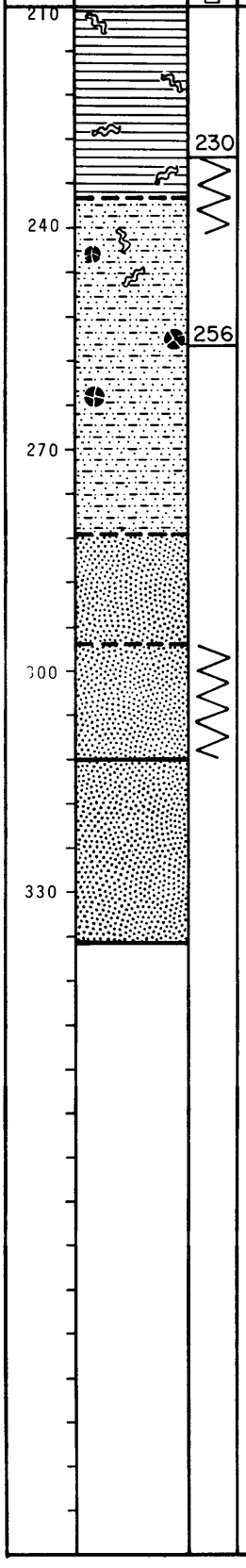
Logged by: Eggers, Graves, Kaharoeddin, Goldstein, Jones, Hattner

ISLAS ORCADAS PC 1277-42



LATITUDE: 66°.00.3' S CORR. DEPTH: 4918 M, 2689 FM

LONGITUDE: 15°.00.7' W CORE LENGTH: 337 CM

LITHOLOGIC DESCRIPTION

CONTINUED

smear slide: 213 cm

Quartz and Feldspar	8
Heavy minerals	3
Clay	89
Volcanic glass	<1

236-281 cm: Sandy mud, light olive gray (5Y 5/2), becoming coarser with depth; micro-manganese nodules sparsely scattered throughout; 2 cm sedimentary clast between 243-245 cm soft, composed of clay; 2 cm sedimentary clast between 254-256 cm, composed of fine quartz sand; 3 cm sedimentary clast between 262-265 cm, composed of fine to very coarse sand; 5 mm inclined lamina between 279-281 cm, composed of fine to coarse sand; slightly bioturbated between 241-248 cm; moderately disturbed between 236-241 cm; slightly washed along the side between 255-281 cm; gradational contact.

smear slides:

	244 cm	270 cm
Quartz and Feldspar	56	45
Mica	1	1
Heavy minerals	15	10
Clay	25	39
Volcanic glass	2	4
Glauconite	1	1
Diatoms	<<1	-

281-296 cm: Fine sand, light olive gray (5Y 5/2); 1 cm lamina of mud between 288-289 cm; unit is slightly washed along the side; gradational contact.

smear slide: 286 cm

Quartz and Feldspar	78
Mica	<1
Heavy minerals	12
Clay	5
Volcanic glass	4
Glauconite	1

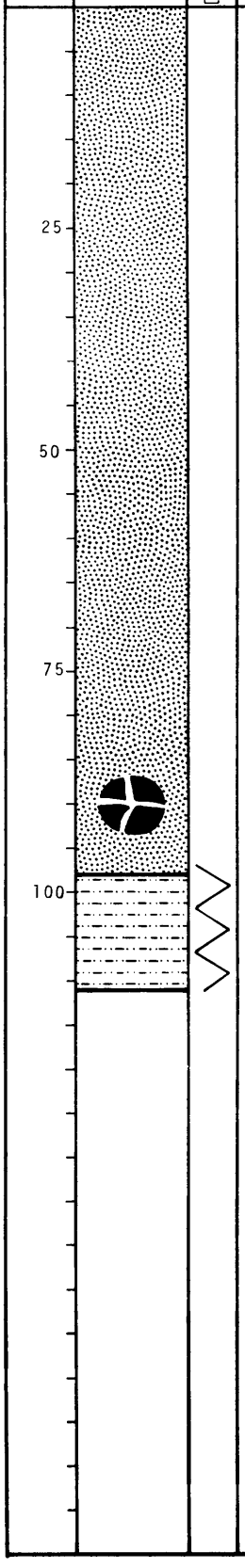
296-312 cm: Very coarse sand, olive gray (5Y 3/2), becoming coarser with depth; unit is moderately disturbed (washed); sharp contact.

312-337 cm: Fine sand, olive gray (5Y 3/2), becoming coarser with depth; unit is slightly washed along the side.

Bottom topography: very flat.

Logged by: Eggers, Graves, Kaharoeddin, Goldstein, Jones, Hattner

ISLAS ORCADAS PC 1277-43



LATITUDE: 68°19.8′ S
LONGITUDE: 23°58.9′ W
CORR. DEPTH: 4724 M, 2583 FM
CORE LENGTH: 111 CM

LITHOLOGIC DESCRIPTION

0-98 cm: Sand, light olive gray (5Y 5/2), grading from very fine, quartz sand at the top of the unit to fine quartz sand at the bottom; sedimentary clast composed of mud (probably reworked material from the underlying unit) between 87-93 cm; slightly washed along the side between 42-95 cm; sharp contact (coincides with end of core section).

smear slides:	7 cm	63 cm	90 cm (sedimentary clast)
Quartz and Feldspar	84	89	25
Heavy minerals	8	6	5
Clay	2	1	65
Volcanic glass	2	2	2
Glauconite	<1	<1	1
Carbonate unspecified	4	2	2
Diatoms	-	-	<1
Sponge spicules	<<1	-	<<1

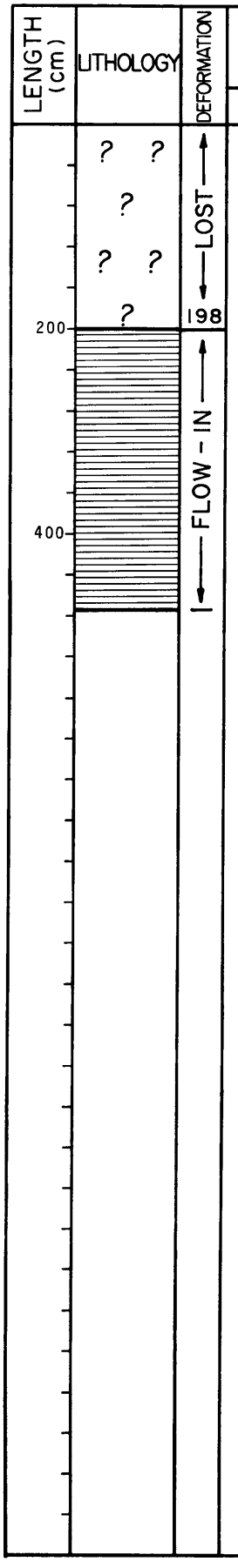
98-111 cm: Mud, moderate olive brown (5Y 4/4); highly disturbed (washed).

smear slide:	108 cm
Quartz and Feldspar	25
Heavy minerals	3
Clay	69
Volcanic glass	2
Carbonate unspecified	1
Diatoms	<<1
Sponge spicules	<<1

Bottom topography: flat, and hard.

Logged by: Graves, Goldstein, Hattner, Kaharoeddin

ISLAS ORCADAS PC 1277-44



LATITUDE: 65°30.2' S
LONGITUDE: 18°31.6' W
CORR. DEPTH: 4910 M, 2685 FM
CORE LENGTH: 474 CM

LITHOLOGIC DESCRIPTION

0-198 cm: This core section was lost during unloading process aboard ship; presumed to have been a full liner.

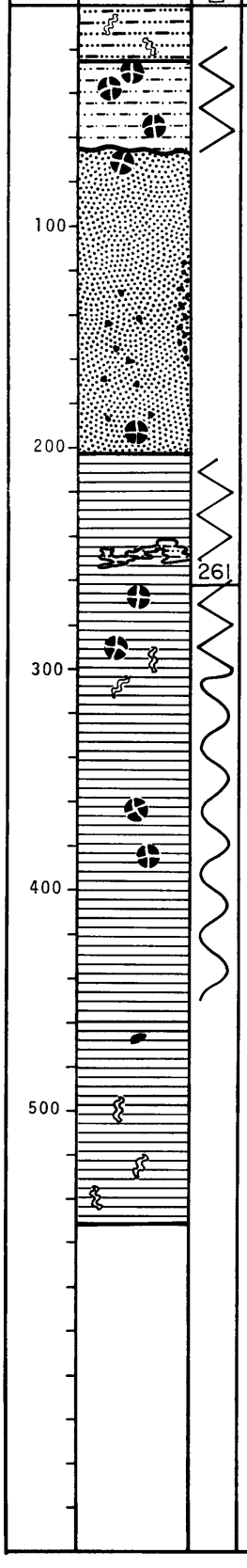
198-474 cm: Pelagic clay, moderate olive brown (5Y 4/4), with occasional stringers of dark gray (N3); moderate olive brown sediment is predominantly clay; dark gray sediment is predominantly silt; flow-in between 198-474 cm.

smear slides:	(clay sediment) 230 cm	(silt sediment) 444 cm
Quartz and Feldspar	12	57
Heavy minerals	3	8
Clay	80	10
Volcanic glass	3	25
Carbonate unspecified	2	-

Bottom topography: not recorded.

Logged by: Goldstein, Graves

ISLAS ORCADAS PC 1277-46



LATITUDE: 68°49.5′ S CORR. DEPTH: 4563 M, 2495 FM

LONGITUDE: 28°38.3′ W CORE LENGTH: 555 CM

LITHOLOGIC DESCRIPTION

0-24 cm: Silt, light olive gray (5Y 5/2); slightly bioturbated throughout; moderately disturbed (washed) between 20-24 cm; slightly washed along the side between 0-20 cm; sharp contact.

smear slide:	2 cm
Quartz and Feldspar	81
Mica	1
Heavy minerals	8
Clay	9
Volcanic glass	1
Sponge spicules	<<1

24-65 cm: Mud, light olive gray (5Y 5/2); sedimentary clast between 26-28 cm (2 cm), 37-47 cm (10 cm) and 56-57 cm (1 cm), composed of silt-size quartz particles, compact; highly disturbed (washed) between 30-47 cm; moderately disturbed (washed) between 24-30 cm and 47-65 cm; sharp, irregular contact.

smear slide:	48 cm
Quartz and Feldspar	35
Heavy minerals	5
Clay	59
Volcanic glass	1
Micro-Mn nodules	<<1
Sponge spicules	<<1

65-204 cm: Fine sand, yellowish gray (5Y 7/2); sedimentary clast between 69-73 cm (4 cm) and 194-201 cm (7 cm), composed of clay, soft; very fine pebbles concentrated along the side due to washing between 118-165 cm; very fine pebbles common between 138-204 cm; unit is slightly washed along the side; sharp contact.

smear slide:	74 cm
Quartz and Feldspar	79
Mica	<1
Heavy minerals	5
Clay	15
Volcanic glass	1

204-555 cm: Pelagic clay, light olive gray (5Y 5/2); increasing clay content with depth; sedimentary clast between 276-277 cm (5 mm), 295-297 cm (2 cm), 370-371 cm (1 cm), 391-393 cm (2 cm) and 396-399 cm (3 cm), composed of silt-size quartz particles, compact; irregular 1 cm stringers of sandy mud between 251-261 cm; 3 cm pebble between 472-475 cm; slightly bioturbated between 293-320 cm and 505-555 cm; moderately disturbed (washed) between 204-300 cm; slightly disturbed (washed) between 300-450 cm.

smear slides:	209 cm	236 cm	255 cm	264 cm	399 cm	534 cm
Quartz and Feldspar	40	42	49	35	25	20
Mica	<1	2	<1	<1	<1	-
Heavy minerals	2	5	6	5	3	3
Clay	57	51	43	59	72	77
Volcanic glass	1	<1	2	1	<1	<1
Micro-Mn nodules	-	<1	<1	<1	<1	-
Zeolite	<1	-	-	-	-	-
Sponge spicules	-	-	<<1	<<1	-	-

Bottom topography: flat; gently rising.

Logged by: Graves, Kaharoeddin, Goldstein, Eggers, Jones

ISLAS ORCADAS CRUISE 1277

DESCRIPTIONS OF TRIGGER CORES AND TRIGGER CORE BAG SAMPLES

TC 1277-1

Latitude: 39°31.8'S
Longitude: 16°51.5'E
Water Depth: 4806 m
Core Length: 56 cm

0-37 cm: Glauconitic, sandy mud, dark yellowish brown (10YR 4/2); glauconite content increases with depth; gradational contact.

37-56 cm: Sandy mud, moderate yellowish brown (10YR 5/4); decreasing glauconite content with depth.

Smear Slides:	3 cm	27 cm	53 cm
Quartz and Feldspar	15	17	27
Mica	<1	-	-
Heavy minerals	4	-	-
Clay	64	55	59
Volcanic glass	2	<1	1
Glauconite	10	12	-
Micro-Mn nodules	<<1	-	-
Carbonate unspecified	-	4	1
Foraminifera	-	<<1	-
Calcareous nannos	<<1	5	<1
Diatoms	2	4	8
Radiolarians	<<1	<<1	<1
Sponge spicules	3	3	4
Silicoflagellates	-	<<1	-

TC 1277-2

Latitude: 45°02.1'S
Longitude: 22°28.2'E
Water Depth: 4806 m
Core Length: 47 cm

0-7 cm: Muddy, diatomaceous ooze, dark yellowish brown (10YR 4/2); slightly bioturbated; gradational contact.

7-39 cm: Diatomaceous, calcareous ooze, dark yellowish brown (10YR 4/2) with mottling of pale yellowish brown (10YR 6/2) throughout; 0.7 cm coarse sand between 30-31 cm; 2 cm angular gravel between 35-37 cm; bioturbated throughout; sharp contact.

39-47 cm: Muddy, diatomaceous ooze, pale yellowish brown (10YR 6/2) with stringers of dark yellowish brown (10YR 4/2); volcanic ash and micro-manganese nodules scattered lightly throughout; micro-manganese nodules more concentrated in dark yellowish brown stringers scattered throughout; slightly mottled throughout.

Smear Slides:	2 cm	16 cm	43 cm
Quartz and Feldspar	3	<<1	10
Heavy minerals	-	<<1	<1
Clay	15	20	15
Volcanic glass	1	<1	<1
Micro-Mn nodules	1	<1	-
Carbonate unspecified	9	41	4
Foraminifera	9	5	<1
Calcareous nannos	<<1	3	<<1
Diatoms	60	30	65
Radiolarians	2	1	5
Sponge spicules	<<1	<<1	1
Silicoflagellates	<1	<<1	-

TC 1277-4

Latitude: 47°59.3'S
Longitude: 21°34.9'E
Water Depth: 4559 m
Core Length: Bag

Bag sample (244.9 grams): Diatomaceous ooze, yellowish gray (5Y 7/2); volcanic ash scattered throughout. NOTE: Approximately 39 cm of sediment originally recovered in core liner, but extruded aboard ship into bag due to bent pipe.

Smear Slide:

Quartz and Feldspar	5
Heavy minerals	<1
Clay	3
Volcanic glass	2
Diatoms	87
Radiolarians	3
Sponge spicules	<1
Silicoflagellates	<1

TC 1277-6

Latitude: 49°29.9'S
Longitude: 21°10.6'E
Water Depth: 4243 m
Core Length: Bag

Bag sample from C/C (0.7 grams): Predominantly basaltic rock fragments, with few basaltic scoria and welded tuff; size ranges from 0.1 cm (very coarse sand) to 1.1 cm (medium gravel); several fragments with manganese coating. NOTE: Sediment not present in bag sample; therefore, sample cannot be taken as necessarily representative of bottom sediment.

TC 1277-7

Latitude: 49°59.4'S
Longitude: 21°06.9'E
Water Depth: 4153 m
Core Length: Bag

Bag sample from C/C (1.3 grams): Diatomaceous ooze, very pale orange (10YR 8/2); micro-manganese nodules scattered lightly throughout; volcanic ash scattered throughout; some sediment well-indurated.

Smear Slide:

Quartz and Feldspar	4
Heavy minerals	2
Clay	2
Volcanic glass	3
Micro-Mn nodules	<1
Carbonate unspecified	<1
Diatoms	86
Radiolarians	3
Sponge spicules	-
Silicoflagellates	<1

TC 1277-11

Latitude: 53°00.0'S
Longitude: 20°05.6'E
Water Depth 3027 m
Core Length: Bag

Bag sample (51.9 grams): Foraminiferal, diatomaceous ooze, yellowish gray (5Y 7/2); volcanic ash scattered throughout. NOTE: 11 cm of sediment were originally recovered in core liner; liner thrown from cutting table by saw, disturbing sediment so that it could not be oriented within liner as to top and bottom.

Smear Slide:

Quartz and Feldspar	1
Clay	<1
Carbonate unspecified	2
Foraminifera	15
Diatoms	79
Radiolarians	3
Sponge spicules	<<1
Silicoflagellates	<1

TC 1277-12

Latitude: 54°00.6'S
Longitude: 19°47.5'E
Water Depth: 3178 m
Core Length: 15 cm

0-15 cm: Diatomaceous ooze, grayish orange (10YR 7/4); slightly bioturbated; slightly disturbed (washed) along side of liner; sediment thins out between 10-15 cm.

Smear Slide:

	4 cm
Quartz and Feldspar	<1
Clay	<1
Volcanic glass	<<1
Carbonate unspecified	8
Foraminifera	<1
Diatoms	91
Radiolarians	<1
Silicoflagellates	1

TC 1277-13

Latitude: 56°16.0'S
Longitude: 19°04.2'E
Water Depth: 4100
Core Length: 21 cm

0-21 cm: Diatomaceous ooze, pale yellowish brown (10YR 6/2) and yellowish gray (5Y 7/2); slightly bioturbated and mottled; slightly disturbed (washed) along side of liner between 0-16 cm.

Smear Slide:

	9 cm
Quartz and Feldspar	1
Heavy minerals	<1
Clay	1
Volcanic glass	<1
Carbonate unspecified	5
Diatoms	91
Radiolarians	1
Sponge spicules	<1
Silicoflagellates	1

TC 1277-14

Latitude: 58°26.5'S
Longitude: 18°14.9'E
Water Depth: 4682 m
Core Length: 10 cm

0-8 cm: Muddy, diatomaceous ooze, dark yellowish brown (10YR 4/2); gradational contact.

8-10 cm: Diatomaceous mud, dark yellowish brown (10YR 4/2).

Smear Slides:

	4 cm	9 cm
Quartz and Feldspar	11	7
Heavy minerals	1	3
Clay	27	67
Volcanic glass	<1	1
Micro-Mn nodules	-	<1
Carbonate unspecified	<<1	-
Diatoms	59	20
Radiolarians	2	2
Sponge spicules	<<1	<1
Silicoflagellates	<<1	<<1

TC 1277-15

Latitude: 59°31.5'S
Longitude: 17°50.6'E
Water Depth: 5066 m
Core Length: 57 cm

0-8 cm (?): Diatomaceous mud, dark yellowish brown (10YR 4/2); volcanic ash scattered throughout. NOTE: This sediment was recovered from "inside trigger weight" (deck log) above top of core. The bagged sample (115.1 grams) is arbitrarily determined to represent the top 8 cm of the core.

Smear Slide: (from bag)

Quartz and Feldspar	13
Mica	<1
Heavy minerals	3
Clay	34
Volcanic glass	4
Micro-Mn nodules	<1
Diatoms	43
Radiolarians	3
Sponge spicules	<1
Silicoflagellates	<1

8-57 cm: Muddy, diatomaceous ooze, dark yellowish brown (10YR 4/2) with mottling of light olive gray (5Y 5/2) between 52-55 cm; slightly disturbed (washed) along side of liner between 8-17 cm.

Smear Slides:	13 cm	54 cm
Quartz and Feldspar	8	10
Heavy minerals	3	1
Clay	38	40
Volcanic glass	5	4
Glauconite	<1	-
Micro-Mn nodules	-	<<1
Carbonate unspecified	4	<1
Diatoms	40	44
Radiolarians	2	1
Sponge spicules	<1	<<1
Silicoflagellates	<<1	<1

TC 1277-20

Latitude: 65°00.1'S
Longitude: 15°44.6'E
Water Depth: 3886 m
Core Length: 59 cm

0-59 cm: Pelagic clay, light olive gray (5Y 5/2); foraminifera content descreases with depth; 3 cm manganese-encrusted gravel between 29-32 cm; light ferro-manganese oxide stain throughout. NOTE: Foraminifera in smear slides are broken into fragments.

Smear Slides:	4 cm	51 cm
Quartz and Feldspar	8	15
Mica	<1	-
Heavy minerals	2	<<1
Clay	66	67
Volcanic glass	2	2
Carbonate unspecified	12	6
Foraminifera	6	3
Diatoms	4	6
Radiolarians	-	1
Sponge spicules	<<1	<<1

TC 1277-21

Latitude: 66°00.8'S
Longitude: 15°20.4'E
Water Depth: 3603 m
Core Length: 55 cm

0-55 cm: Marly, foraminiferal ooze, light olive gray (5Y 5/2) with mottling of olive gray (5Y 3/2) between 20-40 cm; slightly disturbed (washed) along side of liner between 50-55 cm. NOTE: Foraminifera in smear slides are broken into fragments.

Bag sample from C/C (57 grams): Marly, foraminiferal ooze, light olive gray (5Y 5/2); ferro-manganese oxide stain throughout. NOTE: Smear slide biased toward fine fraction.

Smear Slides:	3 cm	44 cm	C/C
Quartz and Feldspar	10	6	15
Mica	<1	-	-
Heavy minerals	1	-	8
Clay	47	46	61
Volcanic glass	1	1	2
Carbonate unspecified	10	15	2
Foraminifera	30	32	12
Calcareous nannofossils	<<1	-	-
Diatoms	1	-	<1
Radiolarians	<<1	-	-
Sponge spicules	<<1	-	-

TC 1277-22

Latitude: 67°01.2'S
Longitude: 14°52.4'E
Water Depth: 3904 m
Core Length: 49 cm

0-49 cm: Mud, olive gray (5Y 3/2).

Smear Slides:	3 cm	45 cm
Quartz and Feldspar	40	35
Mica	<1	2
Heavy minerals	4	6
Clay	49	54
Volcanic glass	2	2
Glauconite	<<1	<1
Carbonate unspecified	<<1	-
Diatoms	5	1
Radiolarians	<<1	-
Sponge spicules	<1	<<1

TC 1277-23

Latitude: 67°53.8'S
Longitude: 14°34.8'E
Water Depth: 3698 m
Core Length: 54 cm

0-54 cm: Mud, olive gray (5Y 3/2) and light olive gray (5Y 5/2); irregular-shaped bodies of sand between 13-18 cm; volcanic ash scattered lightly throughout; very lightly mottled throughout; slightly disturbed between 23-27 cm.

Smear Slides:	3 cm	52 cm
Quartz and Feldspar	35	15
Mica	<1	<1
Heavy minerals	5	7
Clay	56	74
Volcanic glass	2	3
Glauconite	<<1	-
Micro-Mn nodules	-	1
Carbonate unspecified	1	<1
Foraminifera	<1	-
Calcareous nannofossils	-	<<1
Diatoms	1	<<1
Radiolarians	<<1	-
Sponge spicules	<<1	<<1

TC 1277-24

Latitude: 68°10.0'S
Longitude: 11°58.8'E
Water Depth: 1862 m
Core Length: Bag

Bag sample from inside trigger weight (21.3 grams): Mud, olive gray (5Y 3/2).

Smear Slide:	
Quartz and Feldspar	50
Mica	2
Heavy minerals	7
Clay	30
Volcanic glass	1
Glauconite	<<1
Micro-Mn nodules	<1
Diatoms	9
Radiolarians	<1
Sponge spicules	1
Silicoflagellates	<<1

TC 1277-25

Latitude: 68°36.5'S
Longitude: 10°57.9'E
Water Depth: 2015 m
Core Length: 59 cm

0-59 cm: Marly, foraminiferal ooze, light olive gray (5Y 5/2); slightly disturbed between 28-43 cm. NOTE: Smear slides biased towards fine fraction.

Smear Slides:	6 cm	37 cm	51 cm
Quartz and Feldspar	10	15	15
Mica	<1	<1	<1
Heavy minerals	5	5	10
Clay	65	44	44
Volcanic glass	2	2	3
Glauconite	<1	<1	-
Micro-Mn nodules	-	-	<1
Carbonate unspecified	5	7	6
Foraminifera	10	25	22
Calcareous nannofossils	<<1	<<1	-
Diatoms	3	1	-
Radiolarians	-	1	-
Sponge spicules	<1	<1	-

TC 1277-26

Latitude: 65°01.6'S
Longitude: 09°11.0'E
Water Depth: 4658 m
Core Length: 59 cm

0-1 cm (?): Pelagic clay, dark yellowish brown (10YR 4/2); very light ferro-manganese oxide stain throughout; volcanic ash scattered throughout. NOTE: This sediment was recovered from inside trigger weight above top of core. The bagged sample (25.1 grams) is arbitrarily determined to represent the top 1 cm of the core.

Smear Slide: (from bag)

Quartz and Feldspar	45
Mica	2
Heavy minerals	12
Clay	31
Glauconite	1
Diatoms	7
Radiolarians	1
Sponge spicules	1
Silicoflagellates	<<1

1-59 cm: Pelagic clay, dark yellowish brown (10YR 4/2); moderately mottled between 21-59 cm; slightly disturbed between 1-8 cm.

Smear Slides:

	7 cm	54 cm
Quartz and Feldspar	38	25
Mica	<1	2
Heavy minerals	5	5
Clay	51	65
Volcanic glass	2	2
Glauconite	1	1
Micro-Mn nodules	<<1	<<1
Carbonate unspecified	<<1	-
Diatoms	3	-
Radiolarians	<<1	-
Sponge spicules	<1	-
Silicoflagellates	<<1	-

TC 1277-27

Latitude: 62°56.0'S
Longitude: 09°07.7'E
Water Depth: 4846 m
Core Length: 75 cm

0-18 cm (?): Diatomaceous mud, dark yellowish brown (10YR 4/2); very light ferro-manganese oxide stain throughout; volcanic ash scattered throughout. NOTE: This sediment was recovered from inside trigger weight above top of core. The bagged sample (340 grams) is arbitrarily determined to represent the top 18 cm of the core.

Smear Slide: (from bag)

Quartz and Feldspar	25
Mica	3
Heavy minerals	6
Clay	44
Volcanic glass	<1
Micro-Mn nodules	<<1
Diatoms	20
Radiolarians	2
Sponge spicules	<1
Silicoflagellates	<<1

18-75 cm: Pelagic clay, dark yellowish brown (10YR 4/2); volcanic ash scattered lightly throughout; moderately bioturbated between 44-54 cm; slightly disturbed between 18-22 cm.

Smear Slides:	23 cm	49 cm	72 cm
Quartz and Feldspar	17	12	13
Mica	-	1	1
Heavy minerals	3	3	6
Clay	62	74	66
Volcanic glass	3	2	3
Glauconite	<1	<1	<1
Micro-Mn nodules	<<1	-	<<1
Zeolites	-	-	<1
Carbonate unspecified	<1	-	<1
Foraminifera	<1	-	-
Diatoms	10	7	8
Radiolarians	4	1	2
Sponge spicules	1	<1	1
Silicoflagellates	<1	<<1	<<1

TC 1277-28

Latitude: 61°28.0'S
Longitude: 09°11.0'E
Water Depth: 5322 m
Core Length: 11 cm

0-11 cm: Diatomaceous mud, dark yellowish brown (10YR 4/2); diatom content decreases downward; bioturbated between 0-3 cm; moderately disturbed (washed) between 0-3 cm.

Smear Slides:	0 cm	6 cm
Quartz and Feldspar	5	7
Heavy minerals	1	1
Clay	45	51
Volcanic glass	3	4
Glauconite	<1	-
Diatoms	39	33
Radiolarians	6	4
Sponge spicules	1	<1
Silicoflagellates	<1	<1

TC 1277-29

Latitude: 59°31.4'S
Longitude: 09°00.0'E
Water Depth: 4976 m
Core Length: Bag

Bag sample from C/C (10.5 grams): Diatomaceous mud, dark yellowish brown (10YR 4/2); 3 manganese nodules, all of coarse sand size (0.6 cm, 0.5 cm); volcanic ash and micro-manganese nodules scattered throughout.

Smear Slide: (from bag)	
Quartz and Feldspar	12
Mica	<1
Heavy minerals	2
Clay	50
Volcanic glass	<1
Micro-Mn nodules	<1
Foraminifera	<<1
Diatoms	35
Radiolarians	1
Silicoflagellates	<<1

TC 1277-30

Latitude: 60°01.2'S
Longitude: 06°07.4'E
Water Depth: 5229
Core Length: 57 cm

0-57 cm: Mud, dark yellowish brown (10YR 4/2); volcanic ash scattered lightly throughout; stringer with increased volcanic ash content between 32-33 cm; slightly disturbed (washed) along side of liner between 26-38 cm and 54-57 cm.

Smear Slides:	6 cm	51 cm
Quartz and Feldspar	2	3
Mica	<<1	-
Heavy minerals	2	2
Clay	81	80
Volcanic glass	1	2
Micro-Mn nodules	<<1	-
Diatoms	13	8
Radiolarians	1	5
Sponge spicules	<1	<1
Silicoflagellates	<<1	-

TC 1277-31

Latitude: 62°01.6'S
Longitude: 04°09.5'E
Water Depth: 5240 m
Core Length: 57 cm

0-57 cm: Pelagic clay, light olive gray (5Y 5/2) and dusky yellow (5Y 6/4); slightly disturbed (washed) along side of liner between 28-38 cm and 43-56 cm.

Smear Slides:	3 cm	10 cm	36 cm	44 cm	48 cm
Quartz and Feldspar	35	10	10	20	15
Mica	<1	<1	-	1	-
Heavy minerals	8	3	5	10	5
Clay	55	79	82	66	74
Volcanic glass	2	2	3	3	1
Glauconite	-	-	<1	<<1	-
Micro-Mn nodules	-	<<1	-	-	-
Diatoms	<1	5	<1	<1	3
Radiolarians	<1	1	-	-	2
Sponge spicules	-	<<1	-	<1	<1
Silicoflagellates	-	<<1	<<1	-	<<1

TC 1277-32

Latitude: 63°00.4'S
Longitude: 03°06.0'E
Water Depth: 5227 m
Core Length: 54 cm

0-54 cm: Pelagic clay, light olive gray (5Y 5/2); 1 cm sedimentary clast between 33-34 cm; micro-manganese nodules scattered very lightly throughout.

Bag sample from C/C (58.6 grams): Pelagic clay, light olive gray (5Y 5/2).

Smear Slides:	7 cm	50 cm	C/C
Quartz and Feldspar	29	10	25
Mica	<1	1	-
Heavy minerals	10	7	8
Clay	58	81	64
Volcanic glass	3	1	3
Diatoms	-	-	<<1
Sponge spicules	-	<<1	<<1

TC 1277-33

Latitude: 63°33.5'S
Longitude: 02°28.7'E
Water Depth: 4184 m
Core Length: 25 cm

0-11 cm (?): Pelagic clay, light olive gray (5Y 5/2); 1.8 cm manganese nodule (coarse gravel size); micro-manganese nodules scattered throughout. NOTE: This sediment was recovered from inside trigger weight above top of core. The bagged sample (233 grams) is arbitrarily determined to represent the top 11 cm of the core.

Smear Slide: (from bag)	
Quartz and Feldspar	25
Mica	<1
Heavy minerals	7
Clay	65
Volcanic glass	3
Diatoms	<1

11-18 cm: Pelagic clay, light olive gray (5Y 5/2); entire unit slightly disturbed (washed) along side of liner; sharp contact.

18-25 cm: Marly, foraminiferal ooze, light olive gray (5Y 5/2); volcanic ash scattered lightly throughout; micro-manganese nodules scattered throughout.

Smear Slides:	14 cm	22 cm
Quartz and Feldspar	23	20
Mica	<1	-
Heavy minerals	7	4
Clay	67	36
Volcanic glass	3	1
Micro-Mn nodules	-	<<1
Carbonate unspecified	<1	4
Foraminifera	-	30
Diatoms	<<1	5
Radiolarians	-	<<1

TC 1277-34

Latitude: 64°28.8'S
Longitude: 01°33.3'E
Water Depth: 2679 m
Core Length: 57 cm

0-57 cm: Foraminiferal, diatomaceous ooze, yellowish gray (5Y 7/2); light ferro-manganese oxide stain throughout; volcanic ash scattered throughout. NOTE: Smear slides biased towards fine fraction.

Smear Slides:	3 cm	55 cm
Quartz and Feldspar	<1	<1
Clay	15	3
Volcanic glass	<<1	<<1
Carbonate unspecified	5	12
Foraminifera	30	25
Diatoms	50	58
Radiolarians	<1	2
Sponge spicules	<<1	<<1
Silicoflagellates	<<1	<<1

TC 1277-35

Latitude: 64°27.3'S
Longitude: 01°46.7'E
Water Depth: 2527 m
Core Length: 59 cm

0-59 cm: Diatomaceous-calcareous ooze, yellowish gray (5Y 7/2); light ferro-manganese oxide stain throughout; volcanic ash scattered throughout; slightly disturbed (washed) between 52-59 cm. NOTE: Smear slide biased towards fine fraction.

Smear Slide:	15 cm
Quartz and Feldspar	2
Heavy minerals	3
Clay	5
Carbonate unspecified	27
Foraminifera	20
Diatoms	40
Radiolarians	3
Sponge spicules	<1
Silicoflagellates	<1

Bag sample from C/C (45.5 grams): Diatomaceous-foraminiferal ooze, yellowish gray (5Y 7/2); ferro-manganese oxide stain throughout.

Smear Slide: (from bag)	
Quartz and Feldspar	1
Heavy minerals	1
Clay	2
Volcanic glass	1
Carbonate unspecified	15
Foraminifera	40
Diatoms	37
Radiolarians	3
Sponge spicules	<1

TC 1277-36

Latitude: 65°32.1'S
Longitude: 00°27.9'E
Water Depth: 3440 m
Core Length: 55 cm

0-55 cm: Marly, foraminiferal ooze, yellowish gray (5Y 7/2); 2.5 cm manganese nodule between 0-2.5 cm; 0.6 cm manganese nodule between 8-9 cm; 0.5 cm manganese nodule between 15-16 cm; micro-manganese nodules scattered throughout; slightly disturbed between 50-54 cm.

Smear Slides:	5 cm	31 cm
Quartz and Feldspar	2	2
Mica	<<1	-
Heavy minerals	1	1
Clay	33	30
Volcanic glass	3	2
Glauconite	<<1	-
Carbonate unspecified	15	37
Foraminifera	30	25
Diatoms	15	3
Radiolarians	1	-
Sponge spicules	<1	<1
Silicoflagellates	<<1	-

TC 1277-37

Latitude: 66°30.5'S
Longitude: 00°40.5'W
Water Depth: 4473 m
Core Length: 47 cm

0-37 cm: Diatomaceous mud, dark yellowish brown (10YR 4/2); 0.5 cm manganese-coated gravel between 15-16 cm; volcanic ash scattered throughout; lightly mottled throughout; bioturbation filled with sand between 31-37 cm; slightly disturbed (washed) along side of liner between 0-8 cm; sharp contact.

37-47 cm: Sandy mud, dark yellowish brown (10YR 4/2); volcanic ash scattered throughout; moderately disturbed (washed) between 45-47 cm.

Smear Slides:	6 cm	43 cm
Quartz and Feldspar	7	65
Mica	2	2
Heavy minerals	3	10
Clay	57	20
Glauconite	<<1	3
Foraminifera	<1	-
Diatoms	30	-
Radiolarians	1	-
Sponge spicules	<1	<1
Silicoflagellates	<<1	-

Bag sample from C/C (62.9 grams): Sandy mud, light olive gray (5Y 5/2); micro-manganese nodules scattered lightly throughout; volcanic ash scattered throughout.

Smear Slide: (from bag)	
Quartz and Feldspar	40
Mica	3
Heavy minerals	12
Clay	41
Glauconite	4
Diatoms	<<1
Radiolarians	<<1
Sponge spicules	<<1

TC 1277-38B

Latitude: 67°29.4'S
Longitude: 01°50.1'W
Water Depth: 4444 m
Core Length: Bag

Bag sample from C/C (13.2 grams): Mud, light olive gray (5Y 5/2); volcanic ash scattered throughout.

Smear Slide: (from bag)

Quartz and Feldspar	40
Mica	<1
Heavy minerals	6
Clay	51
Volcanic glass	2
Glauconite	<<1
Foraminifera	<1
Diatoms	1
Radiolarians	<1
Sponge spicules	<1

TC 1277-39A

Latitude: 68°30.6'S
Longitude: 03°05.1'W
Water Depth: 4001 m
Core Length: Bag

Bag sample from base of core liner (47.6 grams): Sandy mud, light olive gray (5Y 5/2); volcanic ash scattered throughout.

Smear Slide: (from bag)

Quartz and Feldspar	40
Mica	1
Heavy minerals	7
Clay	49
Volcanic glass	2
Glauconite	<1
Diatoms	1
Radiolarians	<1
Sponge spicules	<1

TC 1277-39B

Latitude: 68°29.9'S
Longitude: 03°05.7'W
Water Depth: 4062 m
Core Length: Bag

Bag sample from C/C (27 grams): Sandy mud, light olve gray (5Y 5/2); very light ferro-manganese oxide stain throughout; volcanic ash scattered throughout.

Smear Slide: (from bag)

Quartz and Feldspar	50
Mica	2
Heavy minerals	20
Clay	24
Volcanic glass	1
Glauconite	2
Diatoms	1
Sponge spicules	<1

TC 1277-40

Latitude: 69°29.6'S
Longitude: 04°19.7'W
Water Depth: 2970 m
Core Length: 64 cm

0-64 cm: Mud, moderate olive brown (5Y 4/4); ferro-manganese oxide stain between 16-53 cm; volcanic ash scattered lightly throughout; moderately disturbed (washed) along side of liner between 48-64 cm. NOTE: Core cut into two sections aboard ship: 0-7 cm, and 7-64 cm.

Smear Slides:	3 cm	30 cm	62 cm
Quartz and Feldspar	52	50	20
Mica	1	1	<1
Heavy minerals	7	14	10
Clay	30	29	67
Volcanic glass	3	3	3
Glauconite	<1	<1	<<1
Micro-Mn nodules	-	-	<1
Diatoms	5	3	<1
Radiolarians	1	<1	<1
Sponge spicules	1	<1	<1

TC 1277-41

Latitude: 69°59.9'S
Longitude: 05°04.6'W
Water Depth: 1873 m
Core Length: 16 cm

0-16 cm: Mud, olive gray (5Y 3/2); slightly bioturbated throughout; light ferro-manganese oxide stain throughout; volcanic ash scattered throughout; moderately disturbed (washed) between 13-16 cm.

Bag sample from C/C (73.6 grams): Mud, grayish olive (10Y 4/2); volcanic ash scattered throughout.

Smear Slides:	5 cm	C/C
Quartz and Feldspar	30	36
Mica	1	1
Heavy minerals	10	20
Clay	53	35
Volcanic glass	2	3
Micro-Mn nodules	-	<1
Glauconite	<1	-
Diatoms	3	4
Radiolarians	<1	<1
Sponge spicules	1	1
Silicoflagellates	-	<<1

TC 1277-42

Latitude: 66°00.3'S
Longitude: 15°00.7'W
Water Depth: 4918 m
Core Length: 55 cm

0-55 cm: Pelagic clay, irregular alternations of dark yellowish brown (10YR 4/2) and light olive gray (5Y 5/2); ferro-manganese oxide stain throughout; volcanic ash scattered very lightly throughout; slightly mottled throughout; slightly disturbed along side of liner between 47-55 cm.

Bag sample from C/C (49 grams): Pelagic clay, dark yellowish brown (10YR 4/2); micro-manganese nodules scattered lightly throughout.

Smear Slides:	5 cm	53 cm	C/C
Quartz and Feldspar	9	5	7
Mica	<1	<1	<1
Heavy minerals	6	3	3
Clay	83	90	88
Volcanic glass	2	2	2
Micro-Mn nodules	-	-	<1
Carbonate unspecified	-	-	<1
Diatoms	-	-	<<1

TC 1277-43

Latitude: 68°19.8'S
Longitude: 23°58.9'S
Water Depth: 4724 m
Core Length: Bag

Bag sample from C/C (115 grams): Mud, light olive gray (5Y 5/2); volcanic ash scattered very lightly throughout.

Smear Slide: (from bag)	
Quartz and Feldspar	32
Mica	1
Heavy minerals	8
Clay	54
Volcanic glass	4
Micro-Mn nodules	<1
Carbonate unspecified	1
Diatoms	<<1
Sponge spicules	<1

TC 1277-44

Latitude: 65°30.2'S
Longitude: 18°31.6'W
Water Depth: 4910 m
Core Length: Bag

Bag sample (536.3 grams): Mud, light olive gray (5Y 5/2).. NOTE: This sediment was originally recovered in a core liner; due to bent core barrel, sediment was manually extruded aboard ship and bagged.

Smear Slide: (from bag)

Quartz and Feldspar	7
Mica	<1
Heavy minerals	15
Clay	72
Volcanic glass	6
Micro-Mn nodules	<<1
Diatoms	<<1
Silicoflagellates	<<1

Bag sample from C/C (42.6 grams): Mud, light olive gray (5Y 5/2); volcanic ash and micro-manganese nodules scattered very lightly throughout.

Smear Slide: (from bag)

Quartz and Feldspar	45
Mica	2
Heavy minerals	25
Clay	19
Volcanic glass	9
Glauconite	<<1
Micro-Mn nodules	<<1

TC 1277-45

Latitude: 67°26.3'S
Longitude: 22°41.2'W
Water Depth: 4786 m
Core Length: 10 cm

0-10 cm: Pelagic clay, moderate olive brown (5Y 4/4); moderately disturbed (washed) between 0-8 cm.

Smear Slide:	6 cm
Quartz and Feldspar	15
Mica	<1
Heavy minerals	3
Clay	77
Volcanic glass	5
Diatoms	<1
Radiolarians	<<1
Sponge spicules	<<1

TC 1277-46

Latitude: 68°49.5'S
Longitude: 28°38.3'W
Water Depth: 4563 m
Core Length: Bag

Bag sample from C/C (18.2 grams): Sandy mud, olive gray (5Y 3/2); ferro-manganese oxide stain throughout.

Smear Slide: (from bag)

Quartz and Feldspar	60
Mica	1
Heavy minerals	12
Clay	23
Volcanic glass	4
Glauconite	<<1
Micro-Mn nodules	<1
Diatoms	<1
Sponge spicules	<1

Trigger core descriptions by Goldstein, Graves, Hattner, Jones, Kaharoeddin.

DESCRIPTIONS OF PISTON CORE BAG SAMPLES

Following are the descriptions of bagged samples from piston cores retrieved aboard ARA ISLAS ORCADAS cruise 1277. Sediments recovered by a coring attempt, in addition to those within the core liner, often include the recovery of material lodged in the core cutter and/or the core catcher (C/C). In these cases, the sediment is placed in plastic bags. (Sediment recovery by piston core attempts 38B and 45 is limited solely to the bagged material.)

It is to be noted that some samples are positively identified as to their having been taken from either the core cutter or the core catcher, whereas the majority of the bagged sediments appear simply as C/C. With regard to the latter, it was not able to be accurately determined from deck log data as to whether or not these sediments were recovered from the cutter, the catcher - or both. In several cases, the C/C sediment is contained in more than one bag, with the weight of each bag recorded. Smear slides from duplicate bag samples were prepared and analyzed, and for all cores except number 40, identical lithologies were identified; therefore, only one set of smear slide data was used.

Although the C/C sediment is almost always a part of the basal lithologic unit in the core liner, smear slide data do not necessarily agree between them, either due to local variations within the unit, or to the homogenization and disturbance of the bagged sediment caused by washing action during recovery and bagging. Nevertheless, the efforts to describe them are deemed justified, as they represent the oldest sediment recovered by the core.

All bagged sediments are described according to the criteria presented in this volume. (Refer to table 1, page 5, for corresponding station location data.)

PC 1277-1 Core Cutter (258 grams): Pelagic clay, moderate yellowish brown (10YR 5/4); micromanganese nodules and manganese oxide-stained sand grains sparsely scattered.

smear slide:				
Quartz and Feldspar	15	Carbonate unspecified	2
Mica	<1	Foraminifera	<1
Heavy minerals	2	Calcareous nannos	1
Clay	70	Diatoms	1
Volcanic glass	2	Radiolarians	<<1
Glauconite	5	Sponge spicules	2
Micro-Mn nodules	<1		

PC 1277-2 C/C (10 grams): Pelagic clay, very pale orange (10YR 8/2).

smear slide:			
Quartz and Feldspar	2	Micro-Mn nodules	<1
Clay	97	Carbonate unspecified	<1
Volcanic glass	1	Diatoms	<<1

PC 1277-4 C/C (173 grams): Diatomaceous ooze, dusky yellow (5Y 6/4); volcanic ash sparsely scattered.

smear slide:			
Quartz and Feldspar	3	Micro-Mn nodules	<1
Mica	<1	Carbonate unspecified	1
Heavy minerals	<1	Diatoms	90
Clay	1	Radiolarians	2
Volcanic glass	1	Sponge spicules	<1
Glauconite	<1	Silicoflagellates	2

PC 1277-5 C/C (157 grams): Diatomaceous ooze, dusky yellow (5Y 6/4); volcanic ash sparsely scattered.

smear slide:			
Quartz and Feldspar	2	Carbonate unspecified	<1
Heavy minerals	<1	Diatoms	96
Volcanic glass	<1	Radiolarians	2
Glauconite	<1	Sponge spicules	<<1
Micro-Mn nodules	<1	Silicoflagellates	<1

PC 1277-6 C/C (120 grams): Diatomaceous ooze, dusky yellow (5Y 6/4); volcanic ash sparsely scattered.

smear slide:			
Quartz and Feldspar	4	Diatoms	90
Heavy minerals	<1	Radiolarians	3
Clay	<1	Sponge spicules	<1
Volcanic glass	3	Silicoflagellates	<1

PC 1277-7 C/C (121 grams): Diatomaceous ooze, dusky yellow (5Y 6/4); volcanic ash sparsely scattered.

smear slide:			
Quartz and Feldspar	1	Radiolarians	<<1
Clay	<1	Sponge spicules	<<1
Volcanic glass	<<1	Silicoflagellates	1
Diatoms	98		

PC 1277-8 C/C (185 grams; 46 grams): Diatomaceous ooze, light olive gray (5Y 5/2); sample contained in two bags. NOTE: smear slide is biased towards fine fraction.

smear slide:			
Quartz and Feldspar	5	Diatoms	81
Heavy minerals	1	Radiolarians	4
Clay	5	Sponge spicules	<<1
Volcanic glass	4	Silicoflagellates	<1

PC 1277-9 C/C (105 grams; 37 grams): Diatomaceous ooze, dusky yellow (5Y 6/4); slightly stained with manganese oxide; sample contained in two bags.

smear slide:

Quartz and Feldspar	4	Micro-Mn nodules	<<1
Clay	<1	Diatoms	93
Volcanic glass	<1	Radiolarians	1
Glauconite	<<1	Silicoflagellates	2

PC 1277-10 C/C (116 grams): Diatomaceous ooze, dusky yellow (5Y 6/4).

smear slide:

Quartz and Feldspar	2	Diatoms	92
Clay	<<1	Radiolarians	<1
Volcanic glass	<1	Silicoflagellates	6

PC 1277-11 C/C (148 grams): Diatomaceous ooze, yellowish gray (5Y 7/2); micro-manganese nodules sparsely scattered.

smear slide:

Quartz and Feldspar	1	Carbonate unspecified	7
Heavy minerals	<<1	Foraminifera	<1
Clay	<<1	Diatoms	92
Volcanic glass	<1	Radiolarians	<1
Micro-Mn nodules	<<1	Silicoflagellates	<1

PC 1277-12 C/C (36 grams; 28 grams): Diatomaceous ooze, yellowish gray (5Y 7/2); sample contained in two bags.

smear slide:

Quartz and Feldspar	1	Calcareous nannos	<<1
Clay	<1	Diatoms	99
Volcanic glass	<1	Radiolarians	<1
Micro-Mn nodules	<1	Silicoflagellates	<1
Carbonate unspecified	<1		

PC 1277-13 C/C (22 grams; 2 grams): Diatomaceous ooze, dusky yellow (5Y 6/4); slightly stained with manganese oxides; sample contained in two bags.

smear slide:

Quartz and Feldspar	3	Carbonate unspecified	<1
Heavy minerals	<1	Diatoms	94
Clay	2	Radiolarians	1
Volcanic glass	<1	Silicoflagellates	<1
Micro-Mn nodules	<<1		

PC 1277-15 Core Catcher (78 grams): Diatomaceous mud, light olive gray (5Y 5/2); volcanic ash sparsely scattered; slightly stained with manganese oxides.

smear slide:

Quartz and Feldspar	10	Carbonate unspecified	<1
Heavy minerals	<1	Calcareous nannos	<1
Clay	73	Diatoms	15
Volcanic glass	2	Sponge spicules	<1
Micro-Mn nodules	<1	Silicoflagellates	<<1

PC 1277-16 C/C (223 grams): Clay, light olive gray (5Y 5/2); slightly stained with manganese oxides.

smear slide:

Quartz and Feldspar	3	Carbonate unspecified	<1
Mica	<1	Calcareous nannos	1
Heavy minerals	1	Diatoms	7
Clay	87	Radiolarians	<<1
Volcanic glass	1	Sponge spicules	<<1
Glauconite	<<1	Silicoflagellates	<<1

PC 1277-17 C/C (141 grams): Pelagic clay, light olive gray (5Y 5/2); slightly stained with manganese oxides.

smear slide:

Quartz and Feldspar	20	Micro-Mn nodules	<1
Mica	1	Diatoms	2
Heavy minerals	4	Sponge spicules	<<1
Clay	71	Silicoflagellates	<<1
Volcanic glass	2		

PC 1277-18 Core Catcher (143 grams; 113 grams): Pelagic clay, light olive gray (5Y 5/2); volcanic ash sparsely scattered; slightly stained with manganese

oxides; sample contained in two bags. NOTE: the 113 gram sample is stratigraphically above the 143 gram sample.

smear slide:				
Quartz and Feldspar	12	Micro-Mn nodules	<<1
Mica	<1	Zeolite	<<1
Heavy minerals	3	Diatoms	3
Clay	81	Radiolarians	<<1
Volcanic glass	1	Sponge spicules	<<1

PC 1277-19 C/C (22 grams): Mud, light olive gray (5Y 5/2); slightly stained with manganese oxides.

smear slide:			
Quartz and Feldspar	17	Calcareous nannos	<<1
Mica	1	Diatoms	6
Heavy minerals	5	Radiolarians	<<1
Clay	69	Sponge spicules	<<1
Volcanic glass	2	Silicoflagellates	<<1
Glauconite	<<1		

PC 1277-20 Core Catcher (175 grams; 164 grams): Pelagic clay, yellowish gray (5Y 7/2); micro-manganese nodules sparsely scattered; sample contained in two bags. NOTE: the 175 gram sample is stratigraphically above the 164 gram sample.

smear slide:			
Quartz and Feldspar	4	Zeolite	5
Heavy minerals	2	Carbonate unspecified	<1
Clay	87	Diatoms	<1
Volcanic glass	2		

PC 1277-21 C/C (65 grams): Pelagic clay, yellowish gray (5Y 7/2); micro-manganese nodules sparsely scattered.

smear slide:			
Quartz and Feldspar	2	Diatoms	40
Heavy minerals	2	Radiolarians	<1
Clay	55	Sponge spicules	<1
Volcanic glass	1	Silicoflagellates	<<1
Micro-Mn nodules	<<1		

PC 1277-22 C/C (60 grams): Mud, light olive gray (5Y 5/2); volcanic ash and manganese oxide staining sparsely scattered.

smear slide:			
Quartz and Feldspar	25	Carbonate unspecified	2
Mica	<1	Foraminifera	<1
Heavy minerals	5	Diatoms	1
Clay	65	Radiolarians	<1
Volcanic glass	2	Sponge spicules	<1
Glauconite	<1		

PC 1277-23 C/C (477 grams; 20 grams): Mud, light olive gray (5Y 5/2); sample contained in two bags. Volcanic ash sparsely scattered.

smear slide:			
Quartz and Feldspar	6	Zeolite	<1
Mica	<1	Carbonate unspecified	2
Heavy minerals	2	Foraminifera	<<1
Clay	89	Calcareous nannos	<<1
Volcanic glass	1	Diatoms	<1
Glauconite	<<1	Sponge spicules	<<1

PC 1277-27 C/C (67 grams): Diatomaceous mud, light olive gray (5Y 5/2).

smear slide:			
Quartz and Feldspar	6	Carbonate unspecified	<1
Mica	<1	Calcareous nannos	<<1
Heavy minerals	1	Diatoms	35
Clay	58	Radiolarians	<1
Volcanic glass	<1	Sponge spicules	<<1
Glauconite	<<1	Silicoflagellates	<1

PC 1277-28 C/C (58 grams): Pelagic clay, dusky yellow (5Y 6/4); micro-manganese nodules sparsely scattered.

smear slide:	Quartz and Feldspar	3	Micro-Mn nodules	<1
	Heavy minerals	2	Diatoms	4
	Clay	90	Sponge spicules	<<1
	Volcanic glass	1	Silicoflagellates	<<1

PC 1277-29 Core Catcher (66 grams): Pelagic clay, moderate yellowish brown (10YR 5/4).

smear slide:	Quartz and Feldspar	3	Volcanic glass	1
	Heavy minerals	3	Diatoms	<<1
	Clay	93		

PC 1277-30 C/C (115 grams): Mud, light olive gray (5Y 5/2); volcanic ash sparsely scattered.

smear slide:	Quartz and Feldspar	3	Diatoms	5
	Heavy minerals	1	Radiolarians	<1
	Clay	90	Sponge spicules	<<1
	Volcanic glass	1	Silicoflagellates	<<1
	Micro-Mn nodules	<1		

PC 1277-31 C/C (149 grams): Mud, light olive gray (5Y 5/2); slightly stained with manganese oxides.

smear slide:	Quartz and Feldspar	1	Volcanic glass	1
	Heavy minerals	2	Diatoms	5
	Clay	91	Sponge spicules	<<1

PC 1277-33 C/C (50 grams): Pelagic clay, moderate yellowish brown (10YR 5/4); micro-manganese nodules sparsely scattered.

smear slide:	Quartz and Feldspar	7	Volcanic glass	1
	Heavy minerals	1	Zeolite	<1
	Clay	91	Diatoms	<<1

PC 1277-34 C/C (98 grams): Diatomaceous ooze, very pale orange (10YR 8/2).

smear slide:	Quartz and Feldspar	1	Foraminifera	<1
	Mica	<1	Diatoms	94
	Clay	<1	Radiolarians	1
	Volcanic glass	<<1	Silicoflagellates	<<1
	Carbonate unspecified	4		

PC 1277-36 C/C (48 grams): Muddy, diatomaceous ooze, dark yellowish brown (10YR 4/2).

smear slide:	Quartz and Feldspar	2	Diatoms	60
	Heavy minerals	1	Radiolarians	1
	Clay	35	Sponge spicules	<1
	Volcanic glass	1	Silicoflagellates	<<1
	Micro-Mn nodules	<<1		

PC 1277-38B Total core recovery from base of piston (4 grams): Sand, light olive gray (5Y 5/2); volcanic ash and micro-manganese nodules sparsely scattered.

smear slide:	Quartz and Feldspar	72	Glauconite	1
	Mica	3	Micro-Mn nodules	1
	Heavy minerals	15	Diatoms	<1
	Clay	4	Radiolarians	<1
	Volcanic glass	3	Sponge spicules	1

PC 1277-40 C/C (209 grams): Mud, light olive gray (5Y 5/2).

smear slide:	Quartz and Feldspar	19	Carbonate unspecified	1
	Heavy minerals	6	Foraminifera	<1
	Clay	73	Diatoms	<1
	Volcanic glass	1	Radiolarians	<<1
	Glauconite	<1	Sponge spicules	<1
	Zeolite	<1		

PC 1277-40 C/C (45 grams): Sandy mud, grayish olive (10Y 4/2); very fine gravel (2-4 mm) common.

smear slide:				
Quartz and Feldspar	40	Glauconite	2
Mica	<1	Carbonate unspecified	<<1
Heavy minerals	5	Diatoms	1
Clay	45	Radiolarians	<<1
Rock fragments	3	Sponge spicules	<1
Volcanic glass	4	Silicoflagellates	<<1

PC 1277-41 C/C (392 grams): Mud, light olive gray (5Y 5/2).

smear slide:			
Quartz and Feldspar	25	Volcanic glass	1
Mica	<1	Carbonate unspecified	1
Heavy minerals	5	Diatoms	<1
Clay	68		

PC 1277-42 C/C (30 grams): Gravelly, very coarse sand, olive gray (5Y 3/2).

smear slide:			
Quartz and Feldspar	87	Clay	5
Mica	<1	Glauconite	2
Heavy minerals	5	Diatoms	1

PC 1277-44 C/C (206 grams): Pelagic clay, light olive gray (5Y 5/2).

smear slide:			
Quartz and Feldspar	7	Volcanic glass	1
Heavy minerals	1	Diatoms	<1
Clay	91		

PC 1277-45 C/C (22 grams; total core recovery): Pelagic clay, light olive gray (5Y 5/2); manganese oxide staining common.

smear slide:			
Quartz and Feldspar	37	Volcanic glass	3
Mica	<1	Glauconite	<<1
Heavy minerals	4	Diatoms	<1
Clay	56		

PC 1277-46 C/C (141 grams): Pelagic clay, light olive gray (5Y 5/2); manganese oxide staining common.

smear slide:			
Quartz and Feldspar	21	Clay	75
Mica	<1	Volcanic glass	2
Heavy minerals	2		

Described by: Jones, Graves, and Goldstein

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4. Notification to the curator, with a copy to the program manager, of any proposed change from tasks stated in the original request.

5. Return to the curator of the remainders of samples or any residue in good condition, unless otherwise authorized by the curator.

Investigators may not distribute residue samples to other investigators without prior approval. Investigators receiving residue samples become subject to the reporting procedures outlined in this section. The objective of this provision is not to restrict research; on the contrary, the objective is to insure that the best possible use is made of the samples and that the curator is fully informed as to their use and disposition.

The curation facility may charge investigators to recover freight or mailing expenses involved in filling requests. The curator will estimate charges, if required, before processing the request.

Sediment cores

Sediment cores and bottom samples have been taken from numerous locations in the southern ocean using the research ship *Eltanin* (now *Islas Orcadas)* and other ships. Published core logs are available from the curator of the Florida State University facility. Before publication of logs, preliminary logs generally are available.

Piston core material is apportioned as follows:

- 1/4 for permanent reference, to be held in the core facility for future investigation as authorized by the Division of Polar Programs
- 3/4 for research use

Gravity cores, trigger cores, grab samples, dredge

samples, and other samples are apportioned as follows:

— 1/3 for permanent reference, as above
— 2/3 for research use

Ice cores

Glacier ice cores have been taken at several locations in Antarctica and Greenland. Deep cores (to bedrock) were taken at Byrd Station and Camp Century. Several 100-meter and 400-meter cores have been obtained from other ice sheet locations. The curator of the ice core storage facility at the State University of New York at Buffalo keeps a record of core locations. A data bank exists for each core, and annual reports on use of core are available.

Dry Valley Drilling Project cores

Preliminary core descriptions prepared by site geologists have been published in *DVDP Bulletins,* available from the Department of Geology, Northern Illinois University, DeKalb, Illinois 60115. The Dry Valley Drilling Project staff at Northern Illinois University keeps a record of sample requests, indicating investigator and subjects of study, that is available on request. Frozen and unfrozen core samples are kept at the Florida State University facility. Igneous rock core, including basement and massive basalts, is at Northern Illinois University, but may be moved to Florida State.

Distribution is made after joint approval by the project sponsors: the Antarctic Division, Department of Scientific and Industrial Research, Christchurch, New Zealand; the Japan National Institute for Polar Research, Tokyo; and the Division of Polar Programs. To request samples, researchers use a form available from a DVDP coordinator in Japan, New Zealand, or the United States or from the curator at Florida State University. To aid in choosing samples for study, new researchers may examine cores at the Florida State or Northern Illinois University facilities.

Ross Ice Shelf Project marine sediment cores

RISP cores are logged visually in the field, then shipped to the Florida State facility. The logs are available from the curator at Florida State. Researchers wishing to obtain samples should get a request form from the project coordinator or from the curator at Florida State, then apply to the Division of Polar Programs as described earlier. Normally, core will not be available until after publication of the logs. However, investigators wishing to study ephemeral properties may request that the waiting period be waived. The curator keeps a record of sample requests, indicating investigators and subjects of study. The record is available on request.

Biological samples

To obtain samples/specimens from the Smithsonian Oceanographic Sorting Center, contact the Director, who will advise on availability of specimens and provide a request form. All requests are reviewed by an appropriate peer Advisory Committee established by SOSC. The DPP is advised of all requests and subsequent action. After study, specimens provided by SOSC must be handled as follows: holotypes and a representative series of nontype specimens should be deposited in the U.S. Museum of Natural History; remaining identified specimens may be deposited in other repositories on approval from SOSC curators.

Addresses and telephone numbers

Curator, Ice Core Facility
Department of Geology
State University of New York at Buffalo
Amherst, New York 14226
(716) 831-1852

Curator
Antarctic Marine Geology Research Facility and Core Library
Florida State University
Tallahassee, Florida 32306
(904) 644-2407

Director
Smithsonian Oceanographic Sorting Center
Smithsonian Institution
Washington, D.C. 20560
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